# THE BUILDER

INCORPORATING

"ARCHITECTURE" AND "THE BRITISH ARCHITECT"

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## "PURITAN ARCHITECTURE"

THE articles under this title which conclude in this issue draw attention to a branch of building which will inevitably come into prominence after the war, for large funds are now being collected with the object of rebuilding bombed Nonconformist churches in our blitzed towns and also of erecting new churches to serve the new communities that have been created during the war or will be established soon after it is over. Such buildings interest us all as features in the landscape, if nothing else; so their form and appearance is of concern to the general public as well as to the religious bodies who provide them. Writers on the English village expatiate on the old parish church, the manor house, the picturesque if tumbledown cottages; they wax furious at the advent of a modern chain store, with its red-and-gold fascia or a blatant cinema in such surroundings; they may condone a plain brick Quaker meeting house of Queen Anne's day; but they simply ignore the Village Bethel dated 1830 and the pretentious Gothic chapel of 1880. Such things are apparently not mentioned in polite society.

But to us of the present day, that is all wrong. We know that there is no reason whatever why a Nonconformist chapel should not be as comely a building as the parish church. It is not merely a matter of cost, for nowadays we do not measure the excellence of buildings by the profusion of their carved ornament, and the Puritan chapel is as integral a feature of our national life as the Labour Exchange or the Post Office, types of building which are usually well-designed structures of a modest and reticent kind. Moreover, many Puritan chapels are far from being cheap buildings, yet they seldom find any place in books on church architecture. The reasons for this omission were explained in our recent articles, and an unrivalled opportunity now occurs for a renaissance of Puritan architecture on new lines, modern enough to satisfy contemporary taste and needs, simple enough to maintain the long tradition of Nonconformist building before the Gothic Revival upset the normal development of what Wren rightly called the "Protestant" type of church—the type which he himself advocated and built.

At a recent meeting of the Art Workers' Guild, the old meeting-houses of the Quakers and the Unitarians—two of the smallest of the Dissenting bodies—were admirably described and illustrated by Messrs. Hubert Lidbetter and Ronald Jones respectively; and an appreciative but certainly unbiased audience of artists was introduced to a series of little-known buildings of the late 17th and the 18th centuries, many of them well designed. Although it was shown on that occasion how effectively these meeting-houses fulfilled their function as places of Protestant worship where ritualism had no place, we do not suggest that they should be reproduced to-day to meet modern needs and ideas. The lesson to be drawn from a study of such examples is that the Free Church of to-day should be a distinctive building designed for a simple form of congregational worship, not a pretentious but half-hearted copy of Anglican churches based upon medieval Catholic usage. As the author of our articles remarked, there is nothing particularly Popish in a pointed arch, and nothing specially holy about it either. It was a structural feature used in the later Middle Ages, just as the round arch was used—for secular as well as for sacred buildings—in the early Middle Ages and again in Wren's time. In spite of Ruskin and his disciples, there is no reason why a church should be adorned with a spire, with tracery, or with elaborately carved masonry. All the trouble began with the mid-Victorian idea that every place of worship must be made to "look like a church," in the limited sense of a Gothic building of the period c. 1150–1540; that is, before the reformed Church of England came into being. From about 1540 when England cut adrift from Rome up to the early part of the 19th century, English churches were not Gothic, and so did not comply with the recipe just mentioned.

Bearing these facts in mind, we can rely upon architects of reasonable competence to provide us with modern Free Church buildings which do proclaim their purpose. Such buildings, even without spires or tracery or carving, may bear some impress of the Gothic tradition; but, on the other hand, there are alternative modes of architectural expression which are at least equally appropriate. In fact, the decade before the present war produced quite a number of admirably designed Puritan churches in various styles, proving that the problem is easily capable of solution. The ritual requirements of the chief Nonconformist bodies differ very slightly, and they can readily be grasped by any architect who will take the trouble to master them. The interior of the church may appropriately be austere, with white or cream wall-surfaces predominating, but relieved by a judicious use of colour at salient points. The exterior will probably be of good brickwork, and here the old meeting-houses have something to teach us. Questions of ornament will hardly arise, for there will be a lean period after the war, and the funds now being generously contributed by Free Churchmen will not allow of any superfluities in building. On the contrary, it will often be necessary to plan a church with a "nave" or "auditorium" which can also be used for secular and social gatherings, the "chancel" or "sanctuary" being shut off by a curtain or folding screen on such occasions. It will certainly be desirable in future that the Free Church shall take its proper place in the lay-out of modern housing estates and garden suburbs, as a feature rather than an accident in the landscape. To assist in bringing about these changes, the interest of Nonconformist ministers and their congregations in modern architecture and in their own architectural tradition should be stimulated. Such, in brief, are the architectural problems facing the Free Churches to-day.

# NOTES AND NEWS

## PRINCIPAL CONTENTS


| | Page |
|---|---|
| **ARTICLES.** | |
| LEADER : Puritan Architecture | 203 |
| PURITAN ARCHITECTURE—3. The Future. By Martin S. Briggs, F.R.I.B.A. ... ... ... | 207 |
| CLAY SHINGLE ROOFING. By Ernst May ... ... ... | 212 |
| THE PORTAL HOUSE : Principles Involved. By John Campbell | 214 |
| CORRESPONDENCE ... ... | 215 |
| NEW DIRECTOR OF L.M.B.A.... | 217 |
| FUTURE CONSTRUCTION ... | 221 |
| **ILLUSTRATIONS.** | |
| PROPOSED AIRPORT, BLACKPOOL. By B. H. Colquhoun and Guy Morgan and Partners ... | 205 |
| FREE CHURCH AT PERIVALE PARK. By John P. Blake ... | 208 |
| BAPTIST CHURCH AT SUTTON. By Welch and Lander ... ... | 210 |

*"COMING EVENTS" will be found on page 215.*

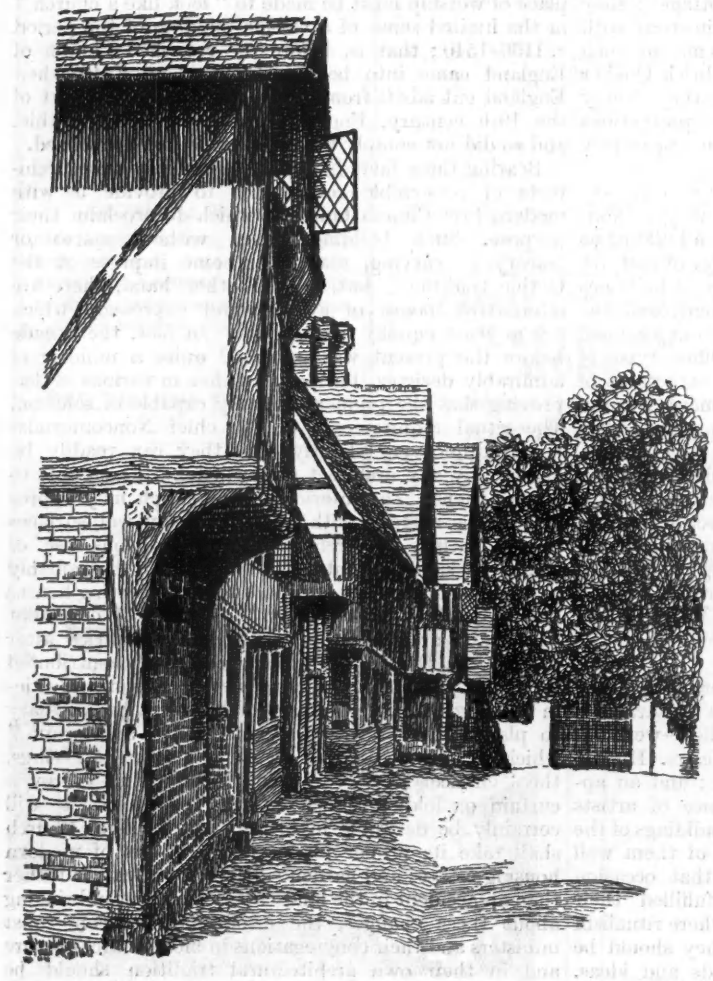

### R.I.B.A. Professional Charges.

THE R.I.B.A. Practice Committee have given considerable time and thought to the question of the revision of the R.I.B.A. scale of professional charges and the charging of architects' fees upon quantity surveyors' charges, but, having regard to the views expressed by many of the Allied Societies, the Council have adopted the recommendation of the Practice Committee not to proceed further with the general revision of the scale at the present time.

It has, however, been necessary for the Council to deal especially with one particular point which has been raised repeatedly in recent years, and that is the question of whether or not the amount of the quantity surveyor's charges should be included in the total upon which the architect bases his percentage fee. The point seldom arises where the quantity surveyor is paid direct by the client, but only where he is paid through the contractor. After careful consideration of the whole matter the Council at their meeting on June 27 last, resolved to inform members that, while not wishing to interfere with existing practices in different parts of the country, they are unable to support the practice of charging fees upon the amount of the quantity surveyor's charges.

### Chiddingstone, Kent.

THE little village of Chiddingstone, in Kent, is a rare treasure-house and well worth a visit to all who find interest in ancient buildings and examples of the ancient crafts associated with building. The sketch shows practically the whole of the village, the church (only just smaller than the village) being directly opposite the houses shown. The date carved on the front of one of the houses is 1637, and it is reputed that the timbers used in the buildings were those salvaged from the wrecks of the Spanish Armada. Certainly they were second-hand when used, for the marks can still be seen of previous mortisings and framings.



CHIDDINGSTONE, KENT. From a Drawing by W. J. Bayliss.
(SEE THIS PAGE)

### London Airport Competition.

FOR the information of competitors in "The Aeroplane's" Airport for London design competition, the journal has published a list of answers to questions submitted in connection with the conditions of the competition, a copy of which may be obtained from Bowling Green-lane, E.C.1.

### College of Estate Management.

THE Governors of the College of Estate Management invite applications for the post of Principal of the College. It is not essential that the applicant should be able to take up duties at once. The post is a full-time appointment, and the salary which the Governors have in mind is in the region of £2,000 per annum. Applications, with references and any testimonials which it is desired to submit, should be sent not later than November 30, 1944, to the Secretary of the College (Emergency Address), Rickmansworth, Herts.

### Sanatorium Competition: Collaborator Required.

A MEMBER of the R.I.B.A. advertises in our advertisement columns this week as wishing to collaborate with a fellow-member in the competition for a sanatorium, Ballyowen, Lucan, Co. Dublin.

### Town Planning Institute.

ON and after September 12, the address of the Town Planning Institute will be changed to 18, Ashley-place, London, S.W.1 (telephone : Victoria 8815).

### Mr. Willink to Address London Rotarians.

AT the invitation of the President, Mr. W. E. Rice, the Minister of Health, Mr. H. U. Willink, M.P., is to be the guest of honour of the Rotary Club of London at a luncheon in the Connaught Rooms on Wednesday, September 20.

### Postponement of Joint "Chemical" Conference.

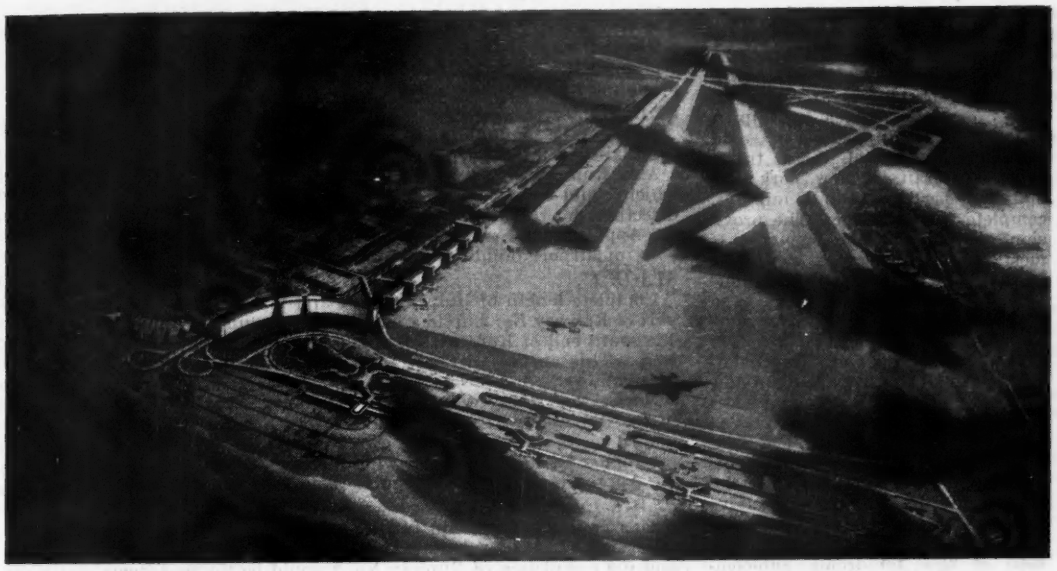
THE Organising Committee of the Institution of Chemical Engineers, the Institute of Physics, and the Chemical Engineering Group (Society of Chemical Industry) has decided to postpone the joint conference on "Instruments for the Automatic Controlling and Recording of Chemical and Other Processes," which was to have been held in London on September 22 and 23. The new date for the conference, which has not yet been fixed, will be announced in due course.

## From *The Builder* of 1844

*Saturday, September* 14, 1844. *Price* 3*d.*

IF the public will use the same discernment in purchasing houses as they use in purchasing goods in a shop there will soon be an end to the cheap building; but while purchasers are to be found for *rubbish only*, the builders of such rubbish are not to blame.

*** From a letter on the evils of speculative housing, in which our correspondent affirmed an instance where bricks were put in with a mixture of mud and lime from sugar refiners.



BIRD'S EYE VIEW.

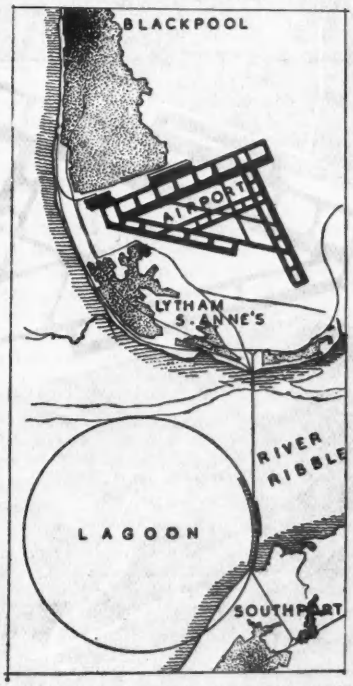
# PROPOSED AIRPORT, BLACKPOOL

GUY MORGAN & PARTNERS, FF.R.I.B.A., and BRIAN H. COLQUHOUN, B.Sc., M.Inst.C.E., CONSULTANTS

PRELIMINARY DESIGNS FOR THE construction by the Blackpool Corporation of what would be the biggest and most ambitious air transport terminal in the world were considered at a full meeting of the Blackpool Town Council recently, and were enthusiastically approved.

When this terminal is constructed it will be the most comprehensive and well-equipped air terminal in existence. Accommodation has been provided for the landing and take-off of aircraft over 100 per cent. larger and heavier than our biggest bombers and transport 'planes of to-day, the accommodation provided being considered adequate to handle over 50,000 passengers a day, inward and outward, from and to all parts of the globe at frequent and regular intervals throughout the day and night, and in all weathers. The most modern hotel accommodation is to be provided in the scheme in order to ensure that all travellers will be able to enjoy the finest amenities procurable within a few minutes after disemplaning. Consideration has also been given to vastly increased freight traffic; the road and rail terminal connections have been planned to accommodate a maximum handling of freight, mails, etc., without in any way interfering with the efficiency of these passenger amenities.

The runways for this great air terminal are considered to be of sufficient size to enable the biggest aircraft in the world to land and take off with complete safety under any traffic or climatic conditions. The main runway is intended to be three miles in length and 200 yards in width, and capable of extending to a total length of 4½ miles. There will be two secondary runways two miles in length each and 150 yards wide, and a fourth runway can be added should it be subsequently required.




PLAN SHOWING RELATION OF SEAPLANE LAGOON TO THE AIRPORT

Provision has also been made for the construction of a trans-Continental airport within the confines of the much larger trans-oceanic terminal, which will adequately deal with all inter-Continental transport of passengers arriving from trans-oceanic aircraft, and also from other parts of this country. It is well within the bounds of probability, therefore, that passengers using this terminal and emplaning at New York after breakfast will be able to have lunch whilst over the Atlantic, tea at the airport hotel, and dinner in Paris, Madrid, Berlin, or Brussels.

The most up-to-date equipment known is being provided at this terminal to ensure that the time saved in travelling thousands of miles by aircraft is not lost in transhipment to other transport services to complete the journey. The lay-out of the runways has been very carefully considered with a view to reducing time loss on taxi-ing and passenger disembarkation to the very minimum, both in the heavy and light types of craft. The change over from the former to the latter is an important feature of the design.

One of the most interesting features of this expansive scheme is in the provision which has been made for a seaplane lagoon four miles in

diameter, which will be connected with the main aircraft terminal by road and rail tunnel under the River Ribble. This facility will mean that passengers arriving perhaps from West Africa by Clipper can be transhipped *via* road through the tunnel to a trans-oceanic aircraft for New York in a matter of perhaps 15 to 20 minutes, complete with baggage. The provision of this seaplane lagoon is a most interesting feature, as it is a further indication that the seaplane is again coming to the fore as a means of safe and speedy trans-oceanic transport.

The consultants on the undertaking are Messrs. Guy Morgan and Partners, FF.R.I.B.A., and Mr. Brian H. Colquhoun, B.Sc., M.Inst.C.E., M.I.Struct.E., F.R.S.A., who write: "This scheme for the future once again indicates the great enterprise and progressive attitude of the Blackpool Corporation. Mr. Rhodes Marshall, Chairman of the Aerodrome Sub-committee, and Mr. Trevor Jones, the Town Clerk, have been particularly enthusiastic and energetic in assisting in the production of the plan."

## STAGES OF BUILDING DEVELOPMENT

THE following is a tentative set of stages by which the landplane section of the airport might be developed, giving a workable plan from a landing and circulation point of view at each stage.

*STAGE I.*

This entails the building of part of Runway No. 1 and its accompanying taxi-strip up to a length of 3,500 yards.

Also Runway No. 4 complete and the taxi-strip to Runway No. 3, which could then be used as a runway, giving one runway in three directions for the first stage.

Approximate cost for Stage I (including part of cost of airport buildings and hangars) ... ... ... £5,630,000

*STAGE II.*

Complete length of Runway No. 1 and taxi-stripping and addition of part of Runway No. 2 up to a length of 3,000 yards. Circulation between the south end of Runway No. 2 and Stage I development of No. 3 taxi-strip. This ensures perfect circulation, still utilising No. 3 taxi-strip as a runway.

NOTE.—Any heavy aircraft operating in a wind direction coincident to the direction of the proposed Runway No. 3 could at this stage be landed on completed Runway No. 1, while No. 3 taxi-strip could take the lighter craft with smaller wind tolerance angles.

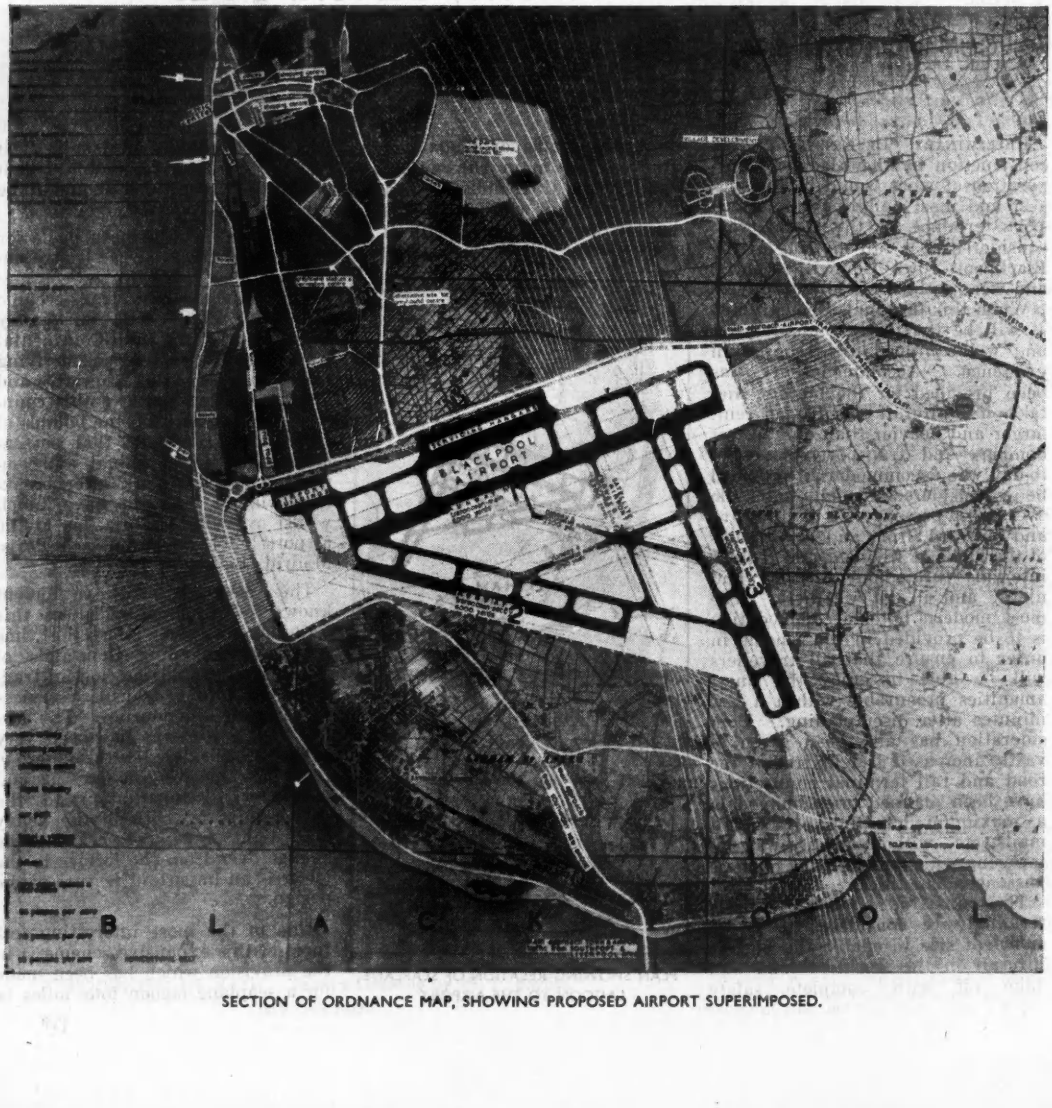
Approximate cost for Stage II ... ... ... ... £4,480,000

*STAGE III.*

This could be split into further stages, but has been shown as one final stage at the present. Obviously, the building of Runway No. 3 and the completion of Runway No. 2 would be the first items.

Approximate cost for Stage III (including completion of airport buildings and hangars) ... ... £4,580,000

Total approximate cost (exclusive of flying-boat base) ... ... ... ... ... ... ... ... £14,690,000




SECTION OF ORDNANCE MAP, SHOWING PROPOSED AIRPORT SUPERIMPOSED.

# PURITAN ARCHITECTURE

## III.—THE FUTURE

By MARTIN S. BRIGGS, F.R.I.B.A.

THE meeting-house of 1690-1700 generally hid its light under a bushel, whereas the Victorian Gothic chapel was usually placed on the most prominent site available, but the Nonconformist church of the future should be sited and designed with some regard for town planning and communal layout. In my second article I mentioned the admirable precedent of the Hampstead Garden Suburb, where the Anglican church and the Free Church are placed symmetrically on either side of the *campus*, forming the central feature of the whole Garden Suburb. In an interesting article in *The Builder* of December 5, 1941, Mr. H. V. Molesworth Roberts outlined a scheme for a sort of "religious centre" on the analogy of a "civic centre," to form a distinctive and prominent feature of any considerable town-planning project. There was to be a *campus* at the end of a vista, open to the vista, and surrounded by three churches on the three other sides. In the centre was to be the church for the predominant religious community in the area. Normally this would be the Church of England, but occasionally it might be the Free Church, and presumably a "Gallup Poll" would have to be taken periodically to decide the question! This ingenious device might put an undue strain upon Christian brotherhood as at present practised. At any rate, the two flanking churches would thus be the Free Church and the Roman Catholic church, or whatever two denominations came second and third in the poll. In the re-entrant angles there would be the vicarage, the manse, the presbytery, and a hall to serve the needs of the three churches, and to be used on Sundays by the Society of Friends if so desired. This scheme would be altogether commendable from an architectural point of view, for providing a dignified group of buildings designed as a harmonious whole.

Although nobody has yet been bold enough, or silly enough, to adapt Le Corbusier's famous slogan to our subject by considering a church as "a machine for worshipping in," one must bow to prevalent fashion and begin by examining our problem from a strictly "functional" standpoint. First of all, provision must obviously be made for a specified number of persons to be so accommodated as to be able to see and hear the preacher, with reasonable conditions of lighting and heating. The seating capacity is a matter for the building committee, not for the architect; but it has a vital influence on his plans, for, if it exceeds 500 or so, he may be driven to the always undesirable expedient of galleries. Considering the experience that usually befalls a Nonconformist congregation who build a large galleried church for a popular preacher in any city, and are ultimately left with a costly white elephant when he departs or when the more prosperous of the faithful trek outwards to a more fashionable district, one would have thought that a salutary lesson would have been learned by now. At all events, the erection of a large galleried church is not to be recommended in ordinary circumstances to-day, and Wren himself expressed some hesitation when he had to adopt this expedient at St. James's, Piccadilly, and elsewhere.

The dimensions of sitting-places and ungalleried aisles are so nearly unalterable that any church, however skilfully planned, to seat more than 500 or 600 persons becomes unduly large and expensive. Whether it can really be made acoustically efficient nowadays, if it exceeds that capacity, seems to be in doubt. On the other hand, acoustical experts do agree that a cruciform plan is acoustically inefficient, and that the box-like old meeting-house with its flat ceiling and its pulpit in the centre of the longer side was ideal from the point of preaching and of choral singing. Since those days, however, the organ and the choir have been introduced to complicate the planner's task. Few modern building committees would wish to revert to the meeting-house plan of 250 years ago, functionally efficient as it undoubtedly was, and modern taste favours a pulpit placed at or near the end of the church farthest from the entrance. The Victorian solution—communion-table, pulpit, choir and organ all piled up one behind the other at the end—which was actually adopted by Sir Edwin Lutyens in his Free Church at the Hampstead Garden Suburb so recently as 1911, is restless and confused. Organ-pipes form a bad background; and the choir should be heard rather than seen, for they too—even if capped and gowned—may create a restless effect. The proper place for them, as well as for the organ, is a low and narrow gallery over the entrance vestibule. This solution is supported by the acoustical experts; and one of them has calculated that an organ housed in an arched "chamber" has only one-quarter of the efficiency of the same instrument placed under the main ceiling.

In the early galleried meeting-houses, the pulpit formed the chief feature; but in Victorian chapels it was difficult to reconcile with a Gothic scheme, for it was usually very large, very lofty, and centrally placed on the axis of the building; so eventually the small Anglican side-pulpit came to be generally adopted. Neither solution is entirely satisfactory from an æsthetic standpoint, and the problem demands fresh and "functional" consideration. In the earliest Christian apsidal basilicas, the bishop preached from his throne in the apse, and a small portable lectern or *ambo* (plural *ambones*) was also used. Later, twin *ambones* were introduced, one for the Gospel and one for the Epistle. These came to be richly decorated with mosaics and to be permanent fixtures on either side of the entrance to the chancel; but the bishop's throne remained at the end of the apse. The use of pulpits in English churches was rare during the early Middle Ages, and even in the fifteenth century not more than one church in four is believed to have had any, but in 1603 the provision of them became compulsory. To this period belong many charming wooden pulpits. They were usually small, and placed at the side of the nave, one bay west of the chancel-screen. When galleries were introduced in Wren's day, the pulpit had to be lofty so that the preacher could see the galleries and be seen and heard from them; this reason also accounts for the tall pulpits in the Nonconformist meeting-houses. If, as is to be hoped, galleries can be avoided in Puritan churches of the future, a small low pulpit will suffice; but if it be laterally placed, an unsymmetrical effect is created, whereas if it be placed centrally, it blocks the apse or chancel where, necessarily, stands the communion-table which in Nonconformist churches takes the place of the altar. An excellent method, already adopted in some recent Anglican churches (*e.g.*, at Weston Green by Mr. Edward Maufe), is the use of small low twin-pulpits or *ambones*, one on either side of the chancel or apse. One can be used regularly by the minister, the other when two ministers share the service or a layman reads the lessons.

This solution allows the communion-table to be placed centrally at the end of the church. It must be remembered that the use of fixed stone altars against the east wall of Anglican churches was banned by law in 1550, and that movable wooden tables had to be substituted. In later years, this law came to be relaxed. In Congregational and Baptist churches, the bread and wine are brought from the communion-table to the congregation seated in their pews, whereas the Methodists retain the custom of the Church of England and come to the table in procession. In any case, the table must be of wood, without frontal or cover, and should be designed to harmonise with the architectural style of the church, not a piece of furniture bought from an ecclesiastical milliner's; the same applies to the chairs that stand behind it against the end wall. The end wall may be perfectly blank, or be covered with a back-cloth (of which there is an excellent example in the Free Church at Perivale Park). A painting of the Last Supper was placed in this

diameter, which will be connected with the main aircraft terminal by road and rail tunnel under the River Ribble. This facility will mean that passengers arriving perhaps from West Africa by Clipper can be transhipped *via* road through the tunnel to a trans-oceanic aircraft for New York in a matter of perhaps 15 to 20 minutes, complete with baggage. The provision of this seaplane lagoon is a most interesting feature, as it is a further indication that the seaplane is again coming to the fore as a means of safe and speedy trans-oceanic transport.

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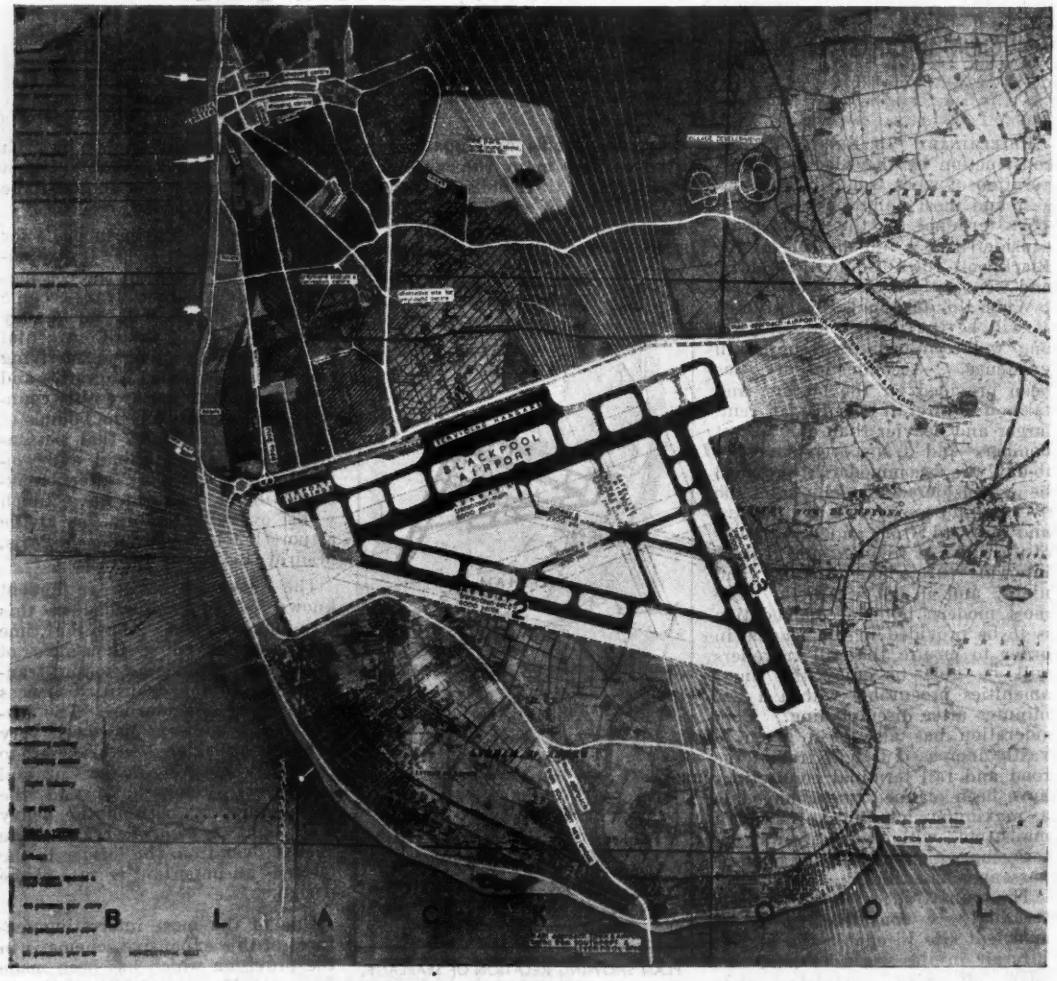


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THE meeting-house of 1690-1700 generally hid its light under a bushel, whereas the Victorian Gothic chapel was usually placed on the most prominent site available, but the Nonconformist church of the future should be sited and designed with some regard for town planning and communal layout. In my second article I mentioned the admirable precedent of the Hampstead Garden Suburb, where the Anglican church and the Free Church are placed symmetrically on either side of the *campus*, forming the central feature of the whole Garden Suburb. In an interesting article in *The Builder* of December 5, 1941, Mr. H. V. Molesworth Roberts outlined a scheme for a sort of "religious centre" on the analogy of a "civic centre," to form a distinctive and prominent feature of any considerable town-planning project. There was to be a *campus* at the end of a vista, open to the vista, and surrounded by three churches on the three other sides. In the centre was to be the church for the predominant religious community in the area. Normally this would be the Church of England, but occasionally it might be the Free Church, and presumably a "Gallup Poll" would have to be taken periodically to decide the question! This ingenious device might put an undue strain upon Christian brotherhood as at present practised. At any rate, the two flanking churches would thus be the Free Church and the Roman Catholic church, or whatever two denominations came second and third in the poll. In the re-entrant angles there would be the vicarage, the manse, the presbytery, and a hall to serve the needs of the three churches, and to be used on Sundays by the Society of Friends if so desired. This scheme would be altogether commendable from an architectural point of view, for providing a dignified group of buildings designed as a harmonious whole.

Although nobody has yet been bold enough, or silly enough, to adapt Le Corbusier's famous slogan to our subject by considering a church as "a machine for worshipping in," one must bow to prevalent fashion and begin by examining our problem from a strictly "functional" standpoint. First of all, provision must obviously be made for a specified number of persons to be so accommodated as to be able to see and hear the preacher, with reasonable conditions of lighting and heating. The seating capacity is a matter for the building committee, not for the architect; but it has a vital influence on his plans, for, if it exceeds 500 or so, he may be driven to the always undesirable expedient of galleries. Considering the experience that usually befalls a Nonconformist congregation who build a large galleried church for a popular preacher in any city, and are ultimately left with a costly white elephant when he departs or when the more prosperous of the faithful trek outwards to a more fashionable district, one would have thought that a salutary lesson would have been learned by now. At all events, the erection of a large galleried church is not to be recommended in ordinary circumstances to-day, and Wren himself expressed some hesitation when he had to adopt this expedient at St. James's, Piccadilly, and elsewhere.

The dimensions of sitting-places and ungalleried aisles are so nearly unalterable that any church, however skilfully planned, to seat more than 500 or 600 persons becomes unduly large and expensive. Whether it can really be made acoustically efficient nowadays, if it exceeds that capacity, seems to be in doubt. On the other hand, acoustical experts do agree that a cruciform plan is acoustically inefficient, and that the box-like old meeting-house with its flat ceiling and its pulpit in the centre of the longer side was ideal from the point of preaching and of choral singing. Since those days, however, the organ and the choir have been introduced to complicate the planner's task. Few modern building committees would wish to revert to the meeting-house plan of 250 years ago, functionally efficient as it undoubtedly was, and modern taste favours a pulpit placed at or near the end of the church farthest from the entrance. The Victorian solution—communion-table, pulpit, choir and organ all piled up one behind the other at the end—which was actually adopted by Sir Edwin Lutyens in his Free Church at the Hampstead Garden Suburb so recently as 1911, is restless and confused. Organ-pipes form a bad background; and the choir should be heard rather than seen, for they too—even if capped and gowned—may create a restless effect. The proper place for them, as well as for the organ, is a low and narrow gallery over the entrance vestibule. This solution is supported by the acoustical experts; and one of them has calculated that an organ housed in an arched "chamber" has only one-quarter of the efficiency of the same instrument placed under the main ceiling.

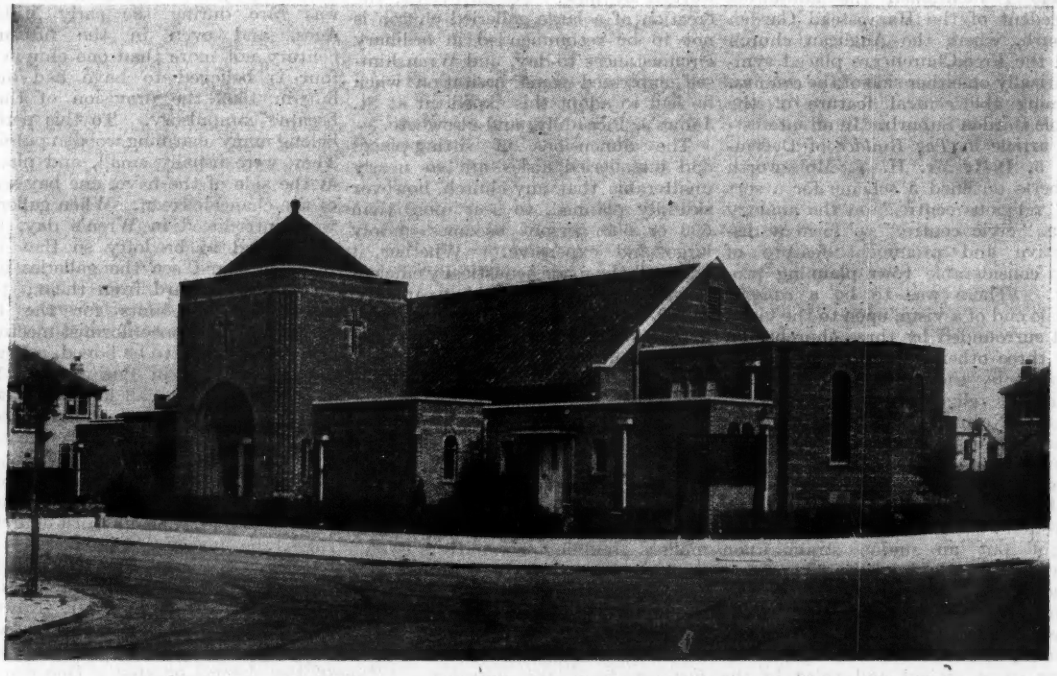
In the early galleried meeting-houses, the pulpit formed the chief feature; but in Victorian chapels it was difficult to reconcile with a Gothic scheme, for it was usually very large, very lofty, and centrally placed on the axis of the building; so eventually the small Anglican side-pulpit came to be generally adopted. Neither solution is entirely satisfactory from an æsthetic standpoint, and the problem demands fresh and "functional" consideration. In the earliest Christian apsidal basilicas, the bishop preached from his throne in the apse, and a small portable lectern or *ambo* (plural *ambones*) was also used. Later, twin *ambones* were introduced, one for the Gospel and one for the Epistle. These came to be richly decorated with mosaics and to be permanent fixtures on either side of the entrance to the chancel; but the bishop's throne remained at the end of the apse. The use of pulpits in English churches was rare during the early Middle Ages, and even in the fifteenth century not more than one church in four is believed to have had any, but in 1603 the provision of them became compulsory. To this period belong many charming wooden pulpits. They were usually small, and placed at the side of the nave, one bay west of the chancel-screen. When galleries were introduced in Wren's day, the pulpit had to be lofty so that the preacher could see the galleries and be seen and heard from them; this reason also accounts for the tall pulpits in the Nonconformist meeting-houses. If, as is to be hoped, galleries can be avoided in Puritan churches of the future, a small low pulpit will suffice; but if it be laterally placed, an unsymmetrical effect is created, whereas if it be placed centrally, it blocks the apse or chancel where, necessarily, stands the communion-table which in Nonconformist churches takes the place of the altar. An excellent method, already adopted in some recent Anglican churches (*e.g.*, at Weston Green by Mr. Edward Maufe), is the use of small low twin-pulpits or *ambones*, one on either side of the chancel or apse. One can be used regularly by the minister, the other when two ministers share the service or a layman reads the lessons.

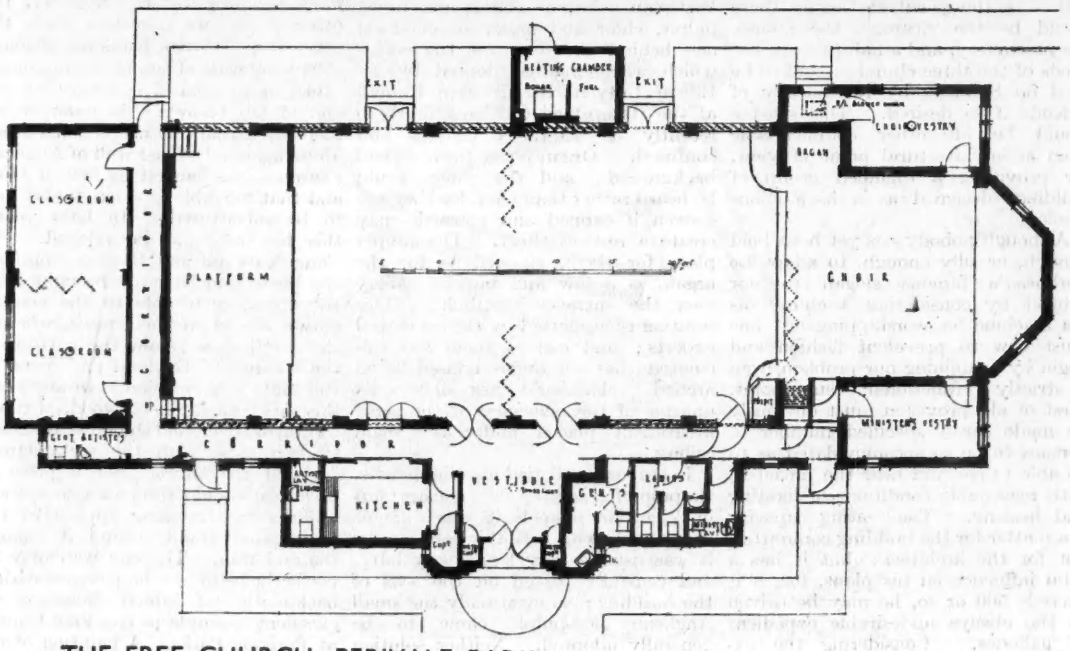
This solution allows the communion-table to be placed centrally at the end of the church. It must be remembered that the use of fixed stone altars against the east wall of Anglican churches was banned by law in 1550, and that movable wooden tables had to be substituted. In later years, this law came to be relaxed. In Congregational and Baptist churches, the bread and wine are brought from the communion-table to the congregation seated in their pews, whereas the Methodists retain the custom of the Church of England and come to the table in procession. In any case, the table must be of wood, without frontal or cover, and should be designed to harmonise with the architectural style of the church, not a piece of furniture bought from an ecclesiastical milliner's; the same applies to the chairs that stand behind it against the end wall. The end wall may be perfectly blank, or be covered with a back-cloth (of which there is an excellent example in the Free Church at Perivale Park). A painting of the Last Supper was placed in this

position in the beautiful Methodist chapel of the "Clubland" Settlement at Walworth, London, destroyed in an air-raid.

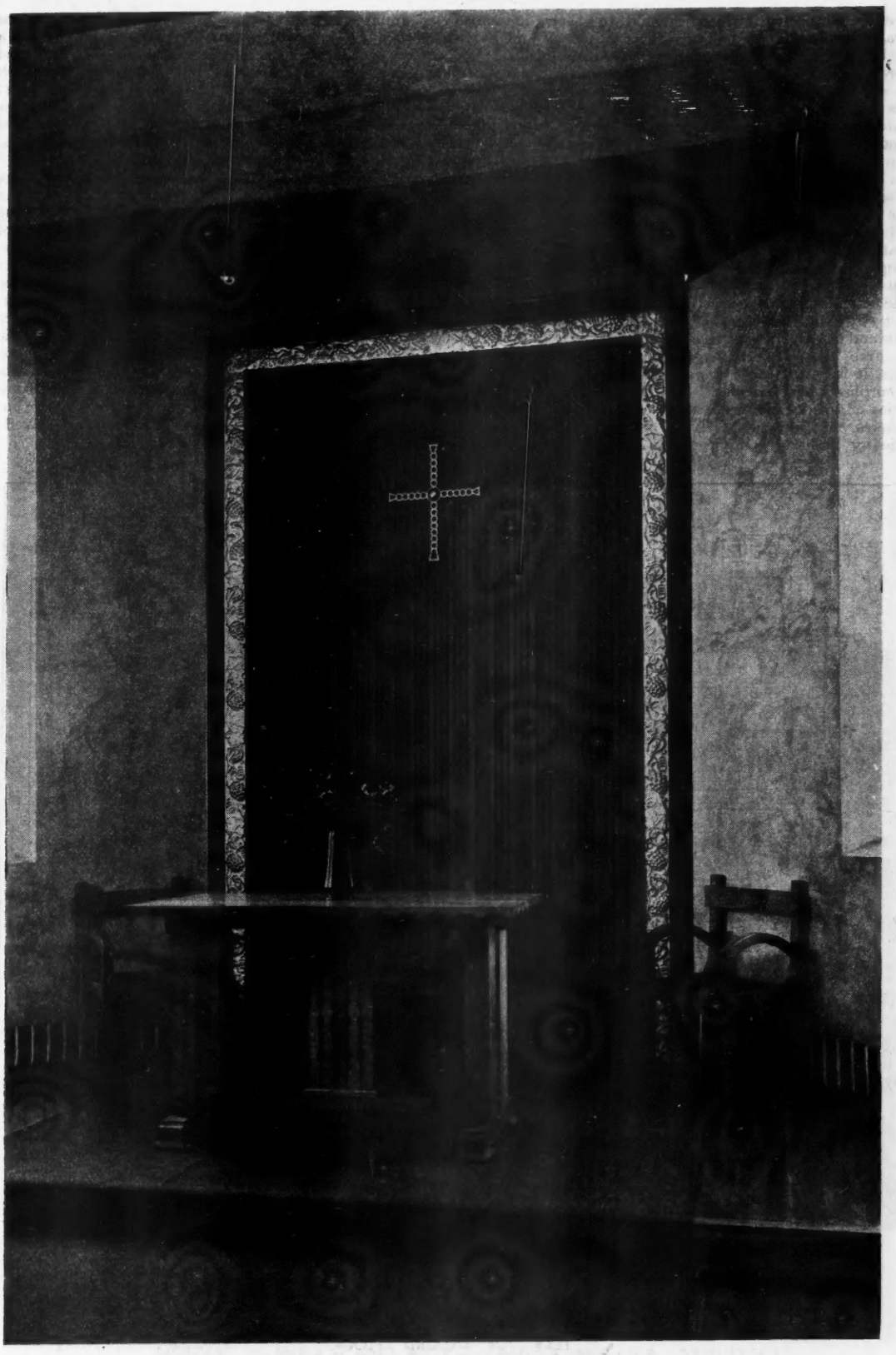
Most of the Free Churches practise infant baptism as in the Church of England, but the ceremony often takes place before the whole congregation so the font should be near the front of the church, not near the entrance as is usual in Anglican churches. To create the effect of extreme austerity which seems to me to be the ideal for Puritan worship, a fixed stone font—in itself an unsymmetrical feature—may be replaced by a small portable brass font, concealed—when not in use—in a recess behind one of the twin pulpits. The Baptist custom of adult immersion, which has some claim to be regarded as the earliest Christian practice, requires a tank sunk in the chancel floor. This tank may be placed against the end wall of the church behind the (movable) communion-table, in a shallow recess, with steps at either end, and demands appropriate architectural treatment. There is a good example in the new Baptist church at Sutton (Surrey). Robing-rooms are also needed.

The foregoing are the specific "functional" requirements of a modern Puritan church; such matters as seating, lighting, heating, acoustics and construction are common to all places of worship and of public assembly. The suggestions made above, however, facilitate the satisfaction of æsthetic as well as of functional needs, for they all help to produce the effect of dignified and






THE FREE CHURCH, PERIVALE PARK. JOHN P. BLAKE, F.R.I.B.A., ARCHITECT.



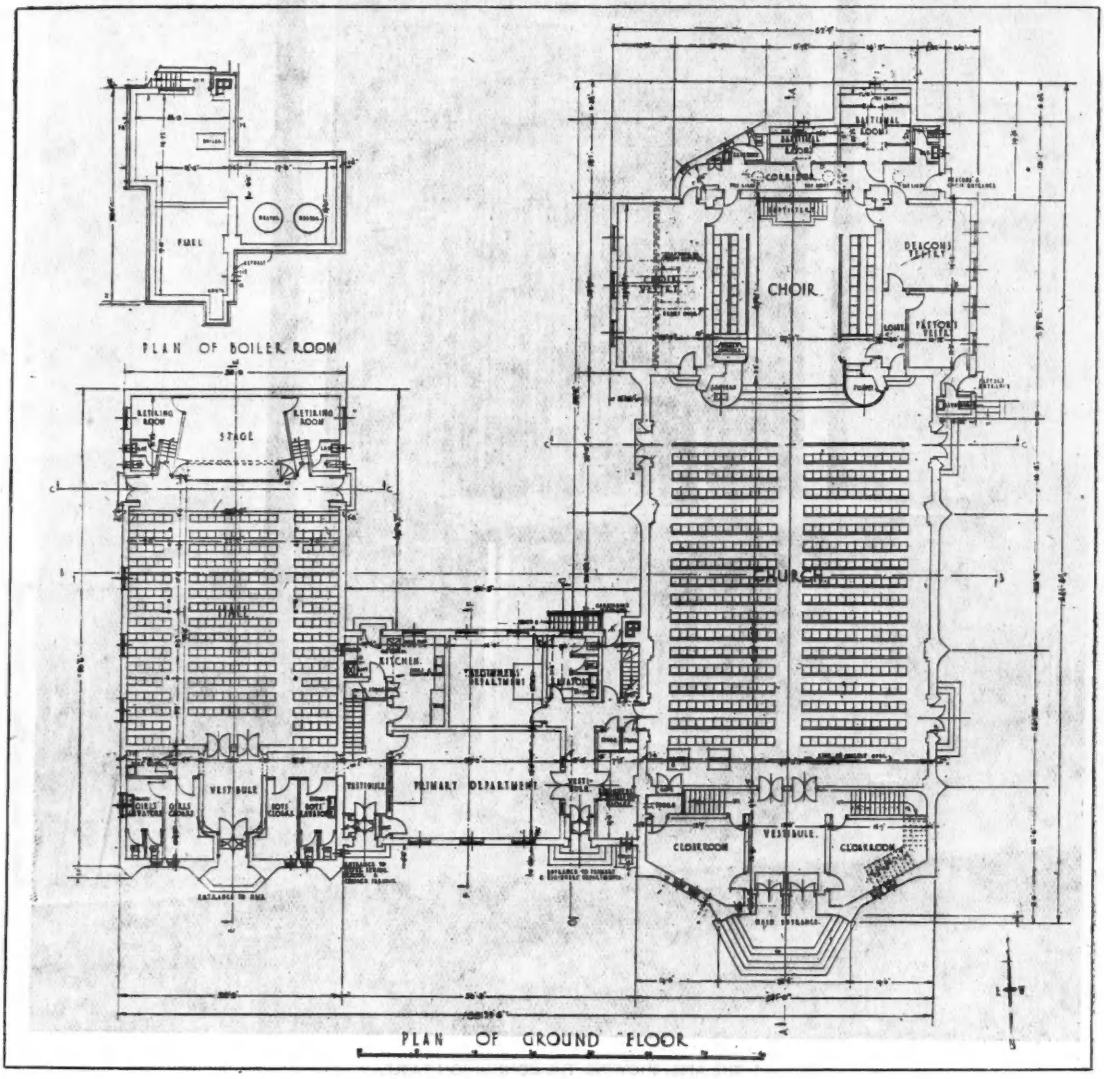
THE APSE, SHOWING THE COMMUNION TABLE.

## THE FREE CHURCH, PERIVALE PARK. JOHN P. BLAKE, F.R.I.B.A., ARCHITECT.

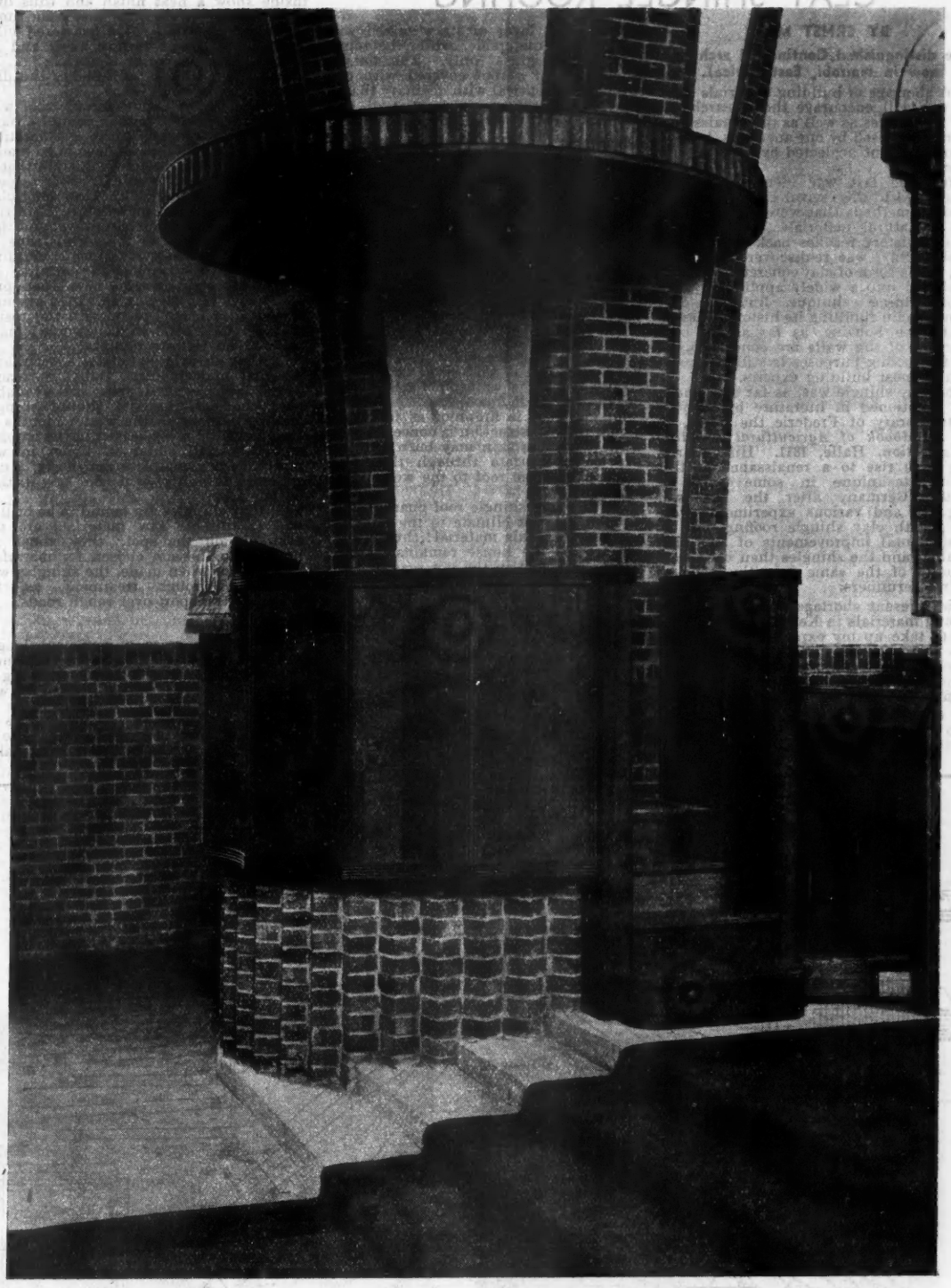
peaceful simplicity which should characterise Puritan worship. This can be achieved without a violent reversion from Victorian Gothic to the meeting-house of 250 years ago; it is no more necessary to reject pointed arches as Popish than to adopt them because they are holy. Open timber roofs are permissible even if they are not quite so efficient acoustically as flat or coved ceilings; it is the irregular roof of varying heights that interferes with acoustics. What should be avoided at all costs is superfluous and meretricious ornament—carved or painted—and the futile attempt to produce a mediæval effect by the addition of shoddy spires and tracery. However generously the Free Churches may contribute funds, it is certain that there will be no surplus after the war for superfluities of this kind. Hitherto, many mistakes of judgment have been made by building committees owing to their ignorance of architecture. Ministers might reasonably be required, as part of their theological course, to make some study of church design, not confined to the Middle Ages with an emphasis on "chancelitis," but including the early Christian basilicas, the Puritan churches of New England, the "Protestant" churches in London designed by Wren, the meeting-houses used by our ancestors 250 years ago, and, naturally, the excellent modern examples erected just before the present war.

The modern problem, however, does not stop with the church itself, but includes the ancillary rooms which are needed for Sunday School purposes and for social activities. Whether these latter activities should be maintained by the various religious denominations in future, or whether they should be relegated to municipal community centres, is a matter of opinion. In the former case, congregations in many new housing areas will be unable to face the cost of a large hall as well as of a church, and already, in some instances, the church has been planned in three sections: a chancel at one end containing the communion-table and pulpit, used only for religious purposes and curtained off from the "auditorium" at other times; a platform or stage for purely secular purposes at the opposite end, curtained off during religious services; and the nave or "auditorium" itself, used for religious services on Sundays and for concerts, lectures, dances and even badminton during the week! There are examples of this in the Free Church at Perivale Park, and in the Congregational Church at the Watling Estate, Mill Hill, both by Mr. J. P. Blake. The idea may seem revolutionary to some minds and repellent to others; but there it is—one more problem solved.

*(Concluded.)*




**BAPTIST CHURCH, SUTTON.** HERBERT A. WELCH & FELIX J. LANDER, FF.R.I.B.A., ARCHITECTS.



THE LECTERN.

## BAPTIST CHURCH, SUTTON.

### HERBERT A. WELCH AND FELIX J. LANDER, FF.R.I.B.A., ARCHITECTS.

# CLAY SHINGLE ROOFING

BY ERNST MAY

**(The distinguished Continental architect, now in Nairobi, East Africa).**

THE shortage of building materials after the war will encourage the research for new techniques as well as the renaissance of practices used by our ancestors, but for various reasons neglected by later generations.

After the last war identical circumstances led to the revival of a number of building methods that were based on the use of natural materials. Pisé, whose ancient history reaches back to the days of old Bliny, was re-discovered, and today, in the form of clay concrete, has been developed into a widely applicable, fool-proof building technique. But while clay is once again fulfilling its historic mission for human housing, as far as the construction of the walls are concerned, its use for roofing purposes is still unknown even to most building experts.

The clay shingle was, as far as I know, first mentioned in literature by Gilly, a contemporary of Frederic the Great, in his *Handbook of Agricultural Building Construction*, Halle, 1811. His description gave rise to a renaissance of this roofing technique in some parts of Eastern Germany after the last war (Fig. 1), and various experiments were made with clay shingle roofing, but no fundamental improvements of any kind resulted and the shingles then used were actually of the same primitive type as their forerunners.

The present shortage of all customary roofing materials in Kenya Colony caused me to take up my experiments after the last war, with the aim of developing the clay shingle technique out of its primitive stage into an efficient and fool-proof roofing method.

A clay shingle is made by working clay into a layer of straw, reed or similar grass in such a way that the finished shingle consists of a layer of straw mixed with clay on the underside, while the top is formed by grass only. The outside appearance of a roof covered with clay shingles is identical with ordinary thatch, but the inside shows no straw at all, only courses of clay-covered shingles (Fig. 2).

## Advantages and Disadvantages.

Before dealing with the making of the shingles I want to consider shortly the advantages and disadvantages of this roofing technique:—

(1) No coal is needed for the production of clay shingles.

(2) Any brick clay may be used for the making of clay shingles, the only other component needed being a suitable grass like uncrushed straw, reed, papyrus, etc.

(3) No skilled labour is needed either for making or for hanging the shingles.

(4) Wherever the raw materials occur on the building site or in its neighbourhood, transport is reduced to a minimum.

(5) The roof is waterproof even in the heaviest tropical downpours.

(6) The roof is fireproof as far as the actual roof construction is concerned, and while the grass skin may burn away, no fire will penetrate through the clayey underside of the roof to the wooden roof construction.

(7) The clay shingle roof guarantees an equable interior climate in the buildings covered with this material; thus even in the tropics the house remains warm in winter and cool in the hot season.

(8) The clay shingle roof is economic not only because of the small cost of the raw material, but also owing to the fact that cut timber in the roof construction can be reduced to a minimum.

(9) In contrast to many of the modern substitutes used for roofing (*i.e.*, bituminous felts in Europe, sheet iron, especially corrugated iron sheets in tropical countries), the clay shingle roof merges harmoniously in any kind of landscape (Fig. 3).

(10) Clay shingle roofs when plastered inside show a neat finish and thus dispense with ceilings. At the same time, the smooth surface of a plastered clay shingle roof keeps vermin away and in this respect is superior to thatch.

Compared to these advantages the disadvantages are few:—

(1) The life of a clay shingle roof will necessarily be shorter than that of a hard roof, but thatch lasts up to a generation in Europe before repairs have to be made, and there is no reason to assume that a clay shingle roof would in this respect prove inferior to thatch. How long clay shingles will last in tropical countries only empiric research can prove, and this applies especially to their resistance to that deadly enemy of all soft building materials in the tropics—the termite. In Kenya my clay shingles have been prepared with clay mortar, to which arsenite of soda has been added, with the result that so far roofs so constructed have suffered no termite damage.

(2) Clay shingle making is a peculiarly seasonal undertaking. Only in places where large covered areas are available near the building site should shingle making be done in the winter months of Europe or the rainy season of the tropics, and they will suffer if stored in wet places. Once complete and hung, atmospheric humidity will do no further harm.

(3) Clay shingles are bound to be brittle, and if suitable raw materials are not available on the spot, they must be brought to the site chosen for manufacture. Even when made, the shingles will not stand rough treatment, as, for example, transport over rough roads.

## Materials Used.

Any pliable grass of sufficient length the stalks of which are not too thick may be considered suitable for the making of shingles. Uncrushed straw and reed will be mainly used in Europe, while in tropical and sub-tropical countries a series of other grasses will also have to be considered. Ordinary step grass makes

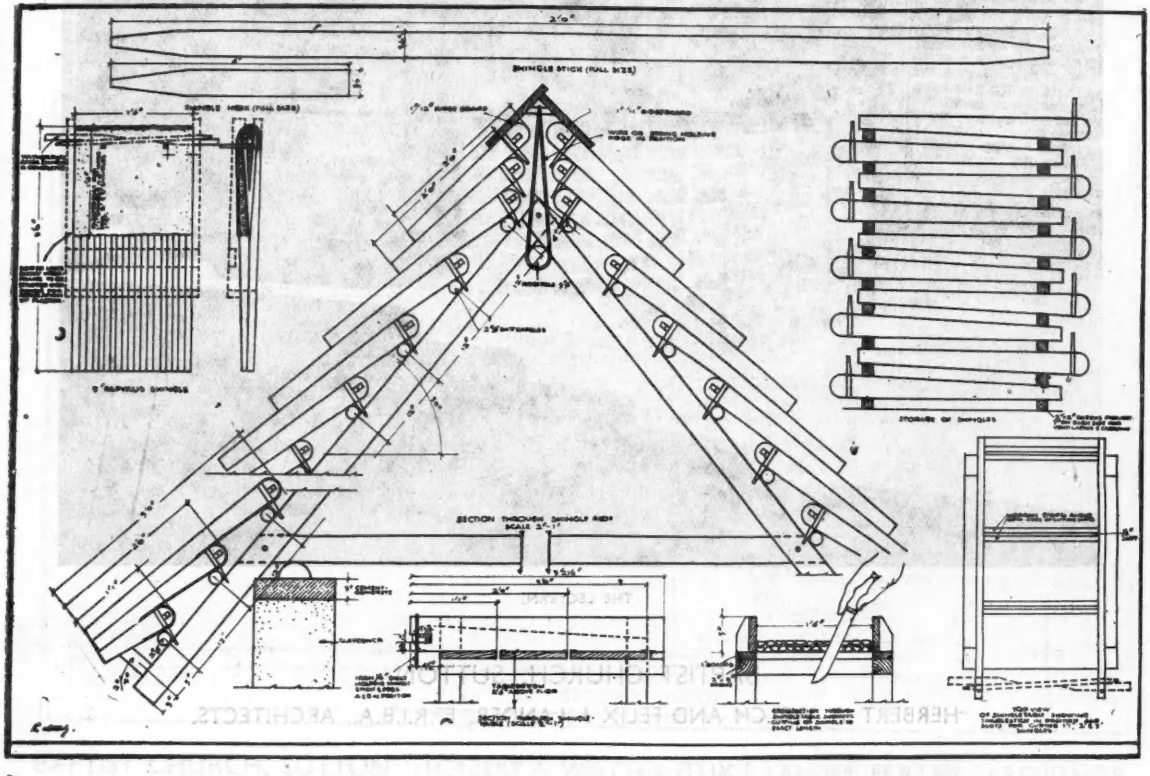


Fig. 1.—Section through clay shingle roof and diagrams of shingle table.

very good shingles and papyrus properly treated allows the production of an excellent clay shingle. In a short summary, it is not possible to deal in detail with a variety of material or the modifications of technique which that variety demands, but those interested will find full instructions in my book "Clay Concrete and Clay Shingles," which will be published after the war.

Whatever material is used, it should be transported to the site as uncrushed as possible, and the best way of preventing damage to the grass is by bundling it immediately after cutting. Straw may be used without special treatment, but reed is best used when half-dry. Since quite dry reed is apt to crack when bent, it must therefore be wetted in a trough before being worked. Green reed has been used without disadvantage.

In the case of rich clays the clay mortar must be meagred by adding sand, otherwise the surface of the shingle will crack. Such cracks, however, do no harm; inside they only concern the appearance of unplastered shingle roof, which looks neater with a smooth inner surface. For all jobs where an open roof is shown, small cracks in the surface of the shingle are rather an advantage, as they form a natural key for the plastering. It must be stressed that the sole purpose of working clay into the shingle is to give it its shape and has nothing to do with the waterproofing of the roof. No water will reach the layer of clay inside the shingle, as will be explained later.

For deciding the proper consistency of the clay it will be advisable to make a few test shingles, mixing clay with various proportions of sand or stone dust. The rich black cotton soil used for the making of clay shingles for Kenya houses roofed in this way was prepared with a mixture of one part of clay with four parts of stone dust.

Fig. 3.—A working-class estate built by Ernst May after the last war, showing clay shingle roofs with clay-mortar ridges.

### Plant and Tools.

Plant and tools for the making of shingles are of the simplest and can be obtained at moderate cost.

Clay shingles are made on a table which consists of a boarded platform of 2 ft. 10 in. by 1 ft. 6 in., which is flanked on the long sides by two boards projecting 5 in. above the surface of the table. These flanking boards overlap 4½ in. over the near end of the platform. Square slots are cut out of the projecting ends of the flanking boards into which the shingle stick and the head wedges are inserted. Iron bolts reaching through drill holes at 1¾ in. distance from the near edge of the table platform secure the shingle stick and the head wedges in position.

The head wedges are tapered off from 1½ in. square diameter at their outer ends to a point approximately 4 in. inside the shingle head and are withdrawn before the otherwise completed shingle is withdrawn from the shingle table. These wedges serve the purpose of forming two holes in the sides of the shingle head into which the projecting ends of the shingle sticks of the adjoining shingles will penetrate when the shingles are being hung to the roof. They force the shingle stick into a slightly diagonal position inside the shingle head (Fig. 1).

The shingle sticks are sawn-off ¾ in. by ¾ in. battens in lengths of 2 ft., and they form the backbone of a shingle round which the overlapping portion of the grass is bent back. Their ends project 3 in. beyond each side of the shingle head and form the handles whereby the shingles are carried.

### Dimensions.

Three sizes of shingles are required for a clay shingle roof, every part of the roof being covered by sections of three overlapping shingles, which makes a roof thickness of 9 in. This logically involves the use of short shingles at the eaves (Fig. 1). The bottom course nearest to the eaves is laid with shingles which are 1 ft. 1 in. long, the next higher course with shingles 2 ft. long and the rest of the roof then covered with the 3-ft. standard shingle. Fig. 1 shows how by using these three types of shingle a neat edge is obtained along the eaves.

The above dimensions explain why grass or straw used for the making of shingles with one layer must be not less than 6 ft. long for the standard shingles, nor less than 4 ft. for the 2-ft. shingles, etc. Often, however, the available grass will be shorter, in which case the shingles must be made of two overlapping layers of grass.

Fig. 1 shows how the top end of the roof is finished off with 2-ft. shingles.

### The Making of Clay Shingles.

The making of the shingles is started with the spreading of a layer of grass material on the table. The root ends should be flush with the far side of the table, while the overlapping ears will rest on a jack put up in front of it. The grass is piled up to a height of 3 in. at the table end (far side).

The shingle stick is then put across the grass with its ends resting in the slots of the flanking boards, the two head wedges

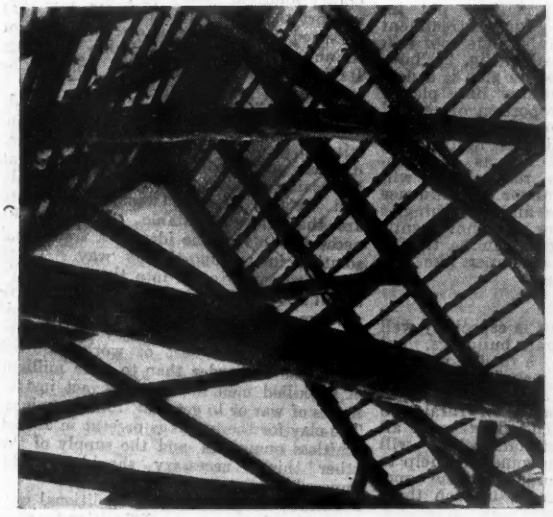


Fig. 2.—Inside of Children's Holiday Camp, Nairobi, showing plastered underside of shingles.

Fig. 4.—The laying of the shingles. Work is started at eaves corner and proceeds diagonally.

are put in and a layer of clay distributed along both sides of the shingle stick, using for this purpose either the hands or the wooden hand spate. The overlapping ends of the grass are now bent back over the shingle stick and pressed into the clay. Then another layer of clay, approximately 1 in. thick, is spread over the grass so that it covers the whole surface of the shingle to within 12 in.-14-in. from the stick. This layer is worked into the grass with a wooden comb or with a pointed stick only, whereupon the surface is smoothed with a wooden trowel. The finished surface should now and then show some grass stalks shining through the clay, which is a proof that the proper quantity of clay has been used. At this stage the shingles are cut to length with a knife along the slots running across the shingle table in 1 ft. 1 in., 2 ft. and 3 ft. spacing from the shingle head. If the ends of the shingle are left uncut the roof will show a smooth surface instead of the stepping. The two hanging pegs are now inserted from the underside till they have penetrated the clay surface of the shingle and their bottom ends are flush with the shingle bottom. The hanging pegs must project vertically from the shingle surface and lean against the shingle stick about 4 in. from each side of the shingle head. The surroundings of the pegs must be well filled with clay, which is pressed in with two fingers of both hands and then slightly heaped up at the pegs. After withdrawing the iron bolts and the two wedges the shingle is ready for removal from the table. This is carried out by one man standing facing the table and gripping the two projecting ends of the stick and withdrawing the shingle horizontally and straight from the platform on to a tray held under the shingle by two other hands.

The shingle should remain untouched on the tray till it has dried, which will take one or several days according to the local climate and atmospheric conditions. The shingles are then stacked ready for use.

A gang of three will produce from 50-70 shingles a day. On these figures calculations of the production-cost can be based. With native labour and a minimum output of 50 shingles per day a shingle cost Cts. 25 in Kenya (1944).

The weight of a dried shingle is approximately 18 lb.

### Roofing with Clay Shingles.

Roofing with the primitive shingles formerly in use was pretty complicated in so far as every shingle had to be tied to the battens by means of wire. With the introduction of the hanging-pegs and the holes in the sides of the shingle heads shingling has become an easy job and a smooth surface is obtained without any particular skill. Every shingle is held fast by the hanging pegs and also by the projecting ends of the shingle stick penetrating neighbouring shingles.

The hanging is carried out in very much the same way as with ordinary tiles (Fig. 4). Work is started at one corner of the roof at the eaves and then proceeds diagonally upwards towards the ridge. Every second course will overlap over the next lower one by half a shingle. For this reason a number of half-shingles have to be held ready. The sides of the roof along the gables are protected by nailing boards against the projecting ends of the roof battens. The shingle stick projecting beyond the shingle head must be sawn off so that the shingle will lie close to the gable board. Every shingle is slightly lifted before the next one is hung to facilitate the introduction of the stick ends into the head holes. Wherever a rafter is in the way of a hanging peg it is sawn off to the thickness of the batten.

With 3-ft. shingles the battens are spaced at 12-in. centres. The spacing near the eaves is shown on Fig. 1.

While the shingles are passed on to the roof they should be handled hanging down vertically. Torsion should be avoided. Slight damage to the shingles during the roofing process is of no importance to the efficiency of the roof and will only affect the appearance of the inside roof if plastering is dispensed with.

The pitch of a clay shingle roof should normally be 50 deg.-55 deg., but parts of the clay shingle roofs slanting down over outbuildings have been carried out with the pitch reduced to 40 deg. without any leakages to date. There can, however, be no doubt that the life of a roof with a steep slope that will easily drain off water will surpass that of less-inclined roofs.

### Covering of Ridge.

The old practice of finishing the ridge of a clay shingle roof provided for filling in the gap between the two top rows of shingles with a sort of sausage made by dipping narrow bundles of grass into clay mortar. A further series of such rolls were then laid close by close across the ridge and the job finished off with a coat of hair lime. This technique, however, is rather complicated and needs thorough workmanship. It is much simpler to use ridge boards for this purpose. Two 12-in. boards are nailed together at an angle of 45 deg., the one overlapping the other by 1 in.-2 in. The inside of this sort of gutter is lined with bituminous felt and then put in position. To make sure of a tight fitting of the ridge boards to the top shingles, short ends of battens are nailed across the angle formed by the ridge boards with 4 ft.-5 ft. spacing, soft steel wire being then slung round the battens and twisted under the ridge purlin. Figs. 1 and 2.)

### Junctions at Chimneys and Turrets.

The making tight of junctions where clay shingle roofs cut into chimneys or roof turrets is carried out with the same technique as is used for the joining of tiled roofs to roof penetrations. A 3-in. recess is cut out of the sides of the chimney stack to cover the clay shingles, and the joints are then either made tight with lime mortar, to which some cow hair or chopped sisal tow is added to increase the cohesion, or a slanting piece of board lined inside with bituminous felt is put over the joint, its upper edge being overlapped by the chimney jambs.

### Hips and Valleys.

Hips and valleys are dealt with in the same way as with ordinary tiled roofs. The tackling of these parts of a roof will always be intricate and in most cases hips and valleys can be dispensed with by slanting the roof down over outbuildings.

### Inside Treatment.

Whenever clay shingle roofs are used for the covering of godowns, stores or for housing schemes, with ceilings put in, there is no need for any further treatment of the shingle. A clay shingle roof that will be seen from inside (Fig. 2), however, must be plastered to give it a neat appearance. Any ordinary lime plaster containing a small proportion of cement will do for this purpose, but it is essential to treat the shingles individually when plastering and not as one continuous surface. The roof timber will expand and contract under the influence of climatic conditions and the shingles should be able to follow such movements.

The plastered shingles can be treated with lime wash or distemper like any other plastered surface.

### Applicability.

The clay shingle roof is especially well suited for agricultural buildings, but there is no reason why a roofing material which has economy, technical efficiency and æsthetic appearance to its credit should not also be used for rural and suburban housing. The shortage of all customary roofing materials which will last for many years to come will help to overcome popular prejudice and the opposition of vested interests, if such there should be.

No royalties are claimed for the making of these clay shingles.

# THE PORTAL HOUSES:
## PRINCIPLES INVOLVED

To the Editor of *The Builder*.

Sir, — An emergency factory-made house has been presented to the public. It is to be a solution of the real and grave problem of the shortage of housing accommodation for the people after the war. A prototype of the house has been put up in the gardens of the Tate Gallery. There can be no doubt that it shows a very intelligent and earnest, and from the technical point of view a very able, attempt to solve the problem as presented.

The proposers and their supporters offer a well-thought-out solution. No more is claimed for it than that it is immediate and temporary. In the complete and efficient way in which it is presented it is hard to criticise it. The dislike of the idea of the house that is certainly felt by a growing number of people cannot therefore be grounded, in the main, on a purely practical or technical basis. If the house is vulnerable it is not because of its virtues, which are manifest. In the completeness of its presentation it claims to be more than temporary. It claims to be the best solution yet of all the difficulties that confront the housewife. If it is vulnerable it is because it is based upon a false principle.

The primary object of this letter is to examine the principle underlying this solution of the problem; and only in the second place to propose an alternative. This principle must be examined as objectively as possible, and if it seems to be of a disruptive nature, then it is possible that there, and not in any claims that may be made for the house by the proposers, the root of the misgiving lies.

The violent break with building tradition represented by this house can be justified in two ways only. Either the house is the only possible way of meeting the demand of the moment, or it is only a beginning, born out of the stress of the moment, of an attempt at a permanent solution of the housing problem, other than by traditional means.

The disadvantages of the emergency factory-made house, in meeting the demand of the moment, are wide and varied. They must be obvious, not least to the proposers themselves. This is indeed acknowledged in the statement that the house is only an immediate and temporary solution. The only argument in its support that can here be justified is that of speed of supply and erection superior to any other kind of suitable building. Its position is unassailable if this can be conclusively proved.

The brick manufacturers and the trade of bricklaying could not, as at present constituted, deal with the problem in the traditional way. This is as certain as that the claims made for the speed of supply and erection of the factory-made house are themselves debatable. It would be necessary to face the idea of a traditional solution in an unorthodox way. There might be conscription into the trade. To a call to rebuild this battered land there are few who would not willingly respond. To train a million brickmakers and bricklayers to do the sort of work required should be no harder than to train millions of unskilled men to use the exact instruments of war or to get coal from the mines. The clay for the bricks is present in almost limitless quantities, and the supply of the other things necessary should not be impossible.

To face the problem in a traditional way might involve no more difficulties than to face it in the way proposed. It might re-

quire no greater powers of organisation. But in this mechanical age we tend to go straight to the mechanical solution, as a matter of course. It is felt that to fight against mechanisation, even when it may be stepping outside its sphere, is impossible.

But perhaps the house, like so many other articles, may be in the process of being proved suitable to mass-production in the factory, and the traditional ways of building may be outmoded, or confined to a dwindling luxury trade?

Whatever the success in the application of mass-production to the fittings of a house, its structure is a thing far too intimately associated with the ground upon which it lies, and the skies above it, ever to be suited to such a method. Many of the difficulties that have confronted and will confront the proposers of the factory-made house are the results of trying to get round this truth. To try to mass-produce the structure of a house is to court, in the end, technical disaster.

Nevertheless, it is more than likely that an attempt to do so will shortly be proposed, not as a temporary immediate solution to the housing problem, but as a permanent one. In this way the great industrial interests will seek to draw the building trade, one of the noblest of the remaining English crafts, into the factory for good. It is probable that the mass-produced house will be publicised as a structure, with all the advantages of skilled planning and convenience that the abilities of the age can put into it. As such, it will be suggested that it is capable of fulfilling a permanent wide need in a cheaper, quicker, fuller, if not in a better, way than the house built by traditional means.

A danger of such gravity to the whole of the building trade cannot be faced by saying that the trade is powerful and influential, and that it would on no account tolerate the extension of the mass-produced house beyond the sphere of the immediate and the temporary. Has any trade in the course of history ever made a stand against the encroachments of the factory with success? Even the falsity of the principle of applying these methods to building structure as a whole will not stop the attempt to impose them and gain their rewards.

Whichever way one tries to justify the break with building tradition represented by the emergency factory-made house one meets with a false principle. If it is proposed as the only possible way of meeting the demands of the moment, then those demands might be better met by traditional methods, using the same amount of ability and organisation. If it is regarded as the beginning of a permanent attempt at the solution of the housing problem, other than by traditional means, then there are those things in its nature which are bound to ensure its failure, and to prove an unjustifiable menace to the regular trade.

The emergency factory-made house seems but another outcome of that ruling idea of expediency that really controls the policy of this country to-day. As a part of that idea it can only end, leaving the technical grounds out of the picture, by being proved fruitless and an illusion. It makes no claim to satisfy the deepest desires in the heart of man.

"Where there is no vision the people perish." To give them bread and the plans of Beveridge and Portal is not in the end enough. Men are not only body, requiring security and a measure of ease. They are also mind and spirit. They require continual strife and the onward press, disregarding convenience, in the quest for the truth. Any solution, whether it be for the well-being of nations or for a housing problem, that takes no account of these things, is doomed to utter failure. If the people of this country were going to put away their arms when the fighting stops, and embrace a life of immediate comfort and ease, then indeed there would be much to be said for the idea of expediency. Within the lifetime of the factory-made house the things for which the war was begun would have been forgotten, and the peace would have been lost. But the people are not wanting to do this. They seek a leader in the peace, as they have so signally found one in war. They demand to be guided to create, if necessary, with their own hands, out of this waste of war, their new and permanent homes, their gardens, and a right way of learning and godly life for themselves and their families. To do this they will face any hardship, and they will have no truck with expedients, the second-rate, the temporary, or anything less than the truth. They will be prepared to go on living, if necessary, as they have gallantly lived in war, in Nissen huts or in tents, with their families or without them, until the true walls have risen for ever, the waste places are become green, and the peace is won. Do we forget the sort of people that we are, now that we are in the hour of victory? Do we forget the dignity of man?

Seeing, as we must, the dangers and weaknesses that the idea of the emergency factory-made house presents, and that it is only a very small part of a wider wrongness of outlook, both technical and spiritual, we should intensify our inquiry into the possibility of meeting the situation presented to us through traditional methods, and in a lasting manner. We should look to it that we place first things first in these brave times. Only so can the soul of man be satisfied, and the future of the things for which so many have died be finally assured.

J. A. CAMPBELL, Architect.

Mevagissey, Cornwall.

## COMING EVENTS

**Monday, September 18.**

INSTITUTION OF CIVIL ENGINEERS. Exhibition of Plymouth Plan. Great George-street, S.W.1. Opening by Mayor of Westminster at 3 p.m.

**Monday, September 18 (to Sept. 25).**

TOWN PLANNING INSTITUTE. Town and Country Planning Summer School. St. Andrew's University.

**Tuesday, September 19.**

HOUSING CENTRE. Mr. F. J. Forty on "Planning the City of London." 13, Suffolk-street, S.W.1. 1.15 p.m. (buffet lunch, 12.45 p.m.).

AMALGAMATED UNION OF BUILDING TRADE WORKERS. 17th National Delegate Conference. Town Hall, Morecambe. (Continuing until Friday evening, September 22.) 9.30 a.m.

**Wednesday, September 20.**

INSTITUTION OF HEATING AND VENTILATING ENGINEERS. Prof. Sir Alfred Egerton, F.R.S., on "Trends in Development of Heating Installations for Domestic Purposes." At Mechanical Engineers, Storey's-gate, S.W. 6 p.m.

FEDERATION OF MASTER BUILDERS. 14th quarterly meeting, preceded by luncheon. Lord Portal, guest of honour. Connaught Rooms, W.C.2. 12.45 p.m.

TOWN AND COUNTRY PLANNING ASSOCIATION. Conference at High Wycombe. Mr. R. L. Reiss on "Planning for an Industrial Market Town." The Oak Room, Town Hall, High Wycombe. 2.30 p.m.

**Thursday, September 21.**

L.M.B.A. Council Luncheon: Presentation to Mr. W. J. Rudderham. The Dorchester Hotel, W. 12.45 p.m.

TOWN AND COUNTRY PLANNING ASSOCIATION. Mr. John Charrington on "The Place of Solid Fuel in Town and Country Planning." 2, Savoy-hill, W.C.2. 1.15 p.m. (buffet lunch, 12.45 p.m.).

**Friday, September 22 (till October 1).**

CITY OF LINCOLN. Civic Survey and Housing Exhibition. The Usher Art Gallery. Opening by the Mayor at 3 p.m.

## CORRESPONDENCE

*[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]*

### Post-War Fenestration.

TO THE EDITOR OF *The Builder*.

SIR,—In reply to the letter in your issue of 8th inst., if the N.P.L. tables of window efficiencies were intended to be of limited application, it is unfortunate that no mention of this appears in the introductory preface. This merely states that buildings along the opposite sides of streets are typical of the continuous horizontal obstructions subtending given angles at the window sills for which the tables are calculated, whilst balconies overhanging window heads are not.

Had there been any other indication whatever that the tables do not refer to all such continuous horizontal angular obstructions to the sills, irrespective of height and distance, it would undoubtedly have been cited by your correspondent. His letter gives no indication at all as to what are the limits of applicability of the tables, without which it is impossible to form any estimate of the practical materiality of any error involved by applying them outside such limits, a point of vital importance upon which the letter is also silent.

Fortunately, I have been placed in a position to supply the missing information. In a letter recently addressed to me on behalf of the Director of Research, Building Research Station, the Secretary of the D.S.I.R. Lighting Committee, at whose request the tables are stated to have been prepared, writes as follows: "In the tables prepared at N.P.L. by Mr. T. Smith, the obstructions are assumed to be at a distance so that they subtend virtually the same angle at the sill or inside the room, and will therefore operate with sufficient accuracy for all normal obstructions. Where they err it will be on the safe side."

Now we know where we are. The tables have been calculated for, and, strictly speaking, are only applicable to, angular obstructions to the sill extending "virtually" to infinite distances, and in consequence are carried up to "virtually" infinite heights, notwithstanding post-war town planning. The calculated efficiencies are therefore all under-estimated, the error involved by applying them to all windows facing continuous horizontal obstructions irrespective of height and distance varying from immaterial to material, and even absurd according to the circumstances of each particular case.

In many, possibly the majority of cases which would in practice require consideration, the error might be negligible; but in that of a first-floor window facing a continuous horizontal obstruction permissible under L.C.C. town-planning rules, which I have worked out in detail, the tabular criteria of efficiency proved to be underestimated by about 22 per cent. My calculations may have been right or wrong, but it would not be difficult to find instances of upper-floor windows designed by architects in which the error would be far greater.

If all windows (or, as recommended in the preface to the tables, all storey heights), in post-war buildings were designed from the tables they would certainly all be on the safe side, but the procedure would not make for economy, nor would the results be in all cases pleasing. If wartime utility trousers were all cut out for men over six feet in height they would certainly all be on the safe side, but

would not in all cases be either economical or pleasing.

Alternatively, as "angles inside the room" would also be the angles subtended at the window heads, the tables must virtually represent, and may even have been calculated for, the effect of angular obstructions to window heads; with the geometrical fiction of infinite distance evoked to enable all windows to be covered by one set of tables, including the windows of upper floors, which are often so situated that their heads are above the top of obstructions subtending angles at the sill.

The tables obviously lack a statement in the preface to the effect that in order to avoid a multiplicity of tables, angular obstructions to the sill have been assumed to extend indefinitely in a direction at right angles to the window, and that although any error thereby involved would be on the safe side, due allowance must be made where the conditions differ materially from those assumed, *e.g.*, where obstructions extend to only a short distance from the sill. It may not be too late for this to be added by a correction slip.

Thus correctly described for what they really are, the tables would have a definite, if more limited, field of usefulness as data, either exact or approximate, of the effect of continuous horizontal obstructions subtending given angles to the heads of windows. As published, they tend to invite extravagance or waste in design, and cannot hope to escape serious, very serious, criticism.

PERCY J. WALDRAM.

113, Whitchurch-gardens, Edgware.

### Vacancies for Architects.

TO THE EDITOR OF *The Builder*.

SIR,—I have read "Lancastrian's" provocative contribution in your issue of September 1. From the writer's cynical remarks it is obvious that he is neither a member of the R.I.B.A. nor a graduate of a School of Architecture; I suspect that he is not an architect at all, and discount his opinions on the qualifications of architects accordingly. The inference that all architects on the Register (except those "leaving Universities after obtaining their diplomas in architecture"!) are equally competent is ludicrous, whilst to compare the number of Associates R.I.B.A. only with the total number of registered architects is deceptive.

The plain facts are that out of the 14,984 persons accorded the legal right to style themselves "architects," 7,294 are members of the Royal Institute of British Architects, and of the latter 4,779 have passed a qualifying examination; of the remainder the proportion so qualified has not been disclosed, but it must be infinitesimal.

I think it has been pointed out before that as a consequence of the Registration Acts the proportion unexamined will diminish continuously, until eventually every architect will have passed the examination which qualifies him or her for election as Associate R.I.B.A.

LEONARD CECIL HOWITT.

Manchester.

TO THE EDITOR OF *The Builder*.

SIR,—I can imagine an entry in the A.R.C.U.K.'s register funnier than that of the belettered novice mentioned by "Lancastrian" in your issue for September 1.

"A" (let us call him) is admitted to the register on the strength of information supplied by "B." This information is later found to be misleading: it is then realised that "A" is *not* qualified to be on the register; but there he must stay, having committed no offence to get there, the offence, if any, being committed by "B."

The chance of such a case is so remote as to be negligible.

H. G. C. SPENCELY [A.R.I.B.A.]

10, Bishop's Road,
Trumpington,
Cambridge.

### Proposed Conway By-Pass.

TO THE EDITOR OF *The Builder*.

SIR,—It seems to me that Mr. Gordon Hemm had not fully considered the alternative to carrying the arterial road alongside the Quay at Conway, when he wrote his letter that appeared in *The Builder* for August 25. The whole matter was most fully considered, in all its aspects, shortly before the war began, and on June 28 and 29, 1939, there was a Public Inquiry at Conway, at which a considerable number of witnesses was called. The Society of Antiquaries and the Council for the Preservation of Rural Wales were represented. Dr. G. H. B. Kenrick, K.C., and I attended on behalf of the Ancient Monuments Society, and we both gave evidence. So far as I can recollect, the learned societies were in agreement. The alternative was to carry the arterial road through the town from the present narrow Telford Suspension Bridge, which I find is to be demolished, to the imitation of an ancient gateway, built by Telford on the Bangor Road.

Such a racing track through the town would have disintegrated it completely, destroyed its unity and deprived it of the quiet that is essential if a charming little walled town like Conway is to be fully appreciated and enjoyed. If the road had been carried through the town, Conway would have lost its identity, and its character would have been transformed and modernised. It would, in fact, have become little more than a milestone, on a great and important motorway, through which the tractors and tanks would rumble, with all the noise that we can hear on the Kingston and other by-passes near London. The visitors, who throng its streets, would then find little in it to detain them long.

The Ministry of War Transport is to be highly congratulated on the admirable solution of a most difficult problem that it has found. I have seen the model in the window of the gas company, in Rose Hill-street, Conway, together with the two water-colours by Mr. J. D. M. Harvey, and I feel greatly relieved to find that the Ministry has given the matter such sympathetic consideration. The arterial roadway along the Quay exposes the town wall and turrets on the riverside to advantage, and affords opportunities that, I am sure, Mr. Hemm and all town-planners will appreciate. The loss of the smallest house in Wales does not disturb me. It had neither use nor beauty, and a photograph in the local museum will be a sufficient reminder of the times when such hopeless dwellings could be erected. I am informed that the Ministry of War Transport was advised in this matter by Dr. Percy Thomas, the President of the Royal Institute of British Architects, and I trust that such collaboration may continue.

JOHN SWARBRICK,
Hon. Reporting Architect of the Ancient Monuments Society.

3, North King's Bench Walk,
Temple, E.C.4.

### The Future for Quantity Surveying: A Serviceman's Viewpoint.

TO THE EDITOR OF *The Builder*.

SIR,—As considerable interest has recently been aroused in the future of the quantity surveying profession, following upon the Bossom Report of conditions in America, I feel I should like to speak on behalf of those quantity surveyors serving in the Forces in regard to their prospects of employment after the war.

First of all, may I point out that, having been overseas for close on four years, my observations are based on what information I have been able to pick up from professional journals, the Press, and from conversations with colleagues recently arrived out here from England. Therefore, my remarks may be regarded as directed to a search after the truth rather than as a criticism of present conditions and the future trend.

War conditions, it appears, have materially affected the work normally undertaken by the practising quantity surveyor. As we know the younger men have been absorbed into the Services, and others, too, not so young. This, then, has left a number of older individual practitioners and also a number of the larger firms to carry on. Now the tendency apparently has been, with urgent and costly work of national importance to be dealt with, often requiring special methods of contract procedure, for this work to be undertaken by those large, well-established firms who have undoubtedly had the staff and facilities to cope with it.

What, then, has been the result? The small practitioner has, in many cases, been obliged to retire from business and the large firms have absorbed practically all the available technical assistants into their employ. In other words, if the present state of affairs is maintained until after the war when many surveyors will be demobilised, we shall have the extraordinary position of about one-tenth of the practising quantity surveyors (*i.e.*, principals of large firms) employing about nine-tenths of the available assistants. It is a parallel case, in commerce, to the large multiple store squeezing out the little man.

Furthermore, we read in the daily Press of ambitious and widespread schemes already being in existence for post-war reconstruction. These, apparently, only require the cessation of hostilities for word to be given to set everything in motion. Such schemes must, of necessity, have required the appointment of a large band of town planners, architects, surveyors and various other consultants; and, moreover, regional boards and committees, fully staffed by technical men, already appear

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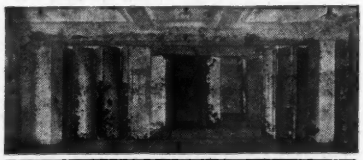
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to be in existence for purposes of official control.

The case, then, of the quantity surveyor returning from the war to resume his civilian occupation does not seem to be a rosy one. He will obtain some sort of a position, doubtless, but not at the top of the ladder. The profession may also find, unless its members are adequately provided for, that many will be driven into the arms of contractors where employment may be more secure and more lucrative.

At a recent professional meeting the chairman graciously referred to those members serving in the Forces and, as an expression of gratitude, requested that every consideration be given them after the war. He further invited suggestions for helping these men.

My suggestion for assisting the ex-Serviceman returning to his profession is, briefly, that every encouragement should be given to the local practitioner.

Instinctively, every one of us is happiest in his local environment and inevitably we attain maximum efficiency there. We get to know local conditions, local builders and local prices. Now, although the competitive system of architectural design does not always permit of an architect carrying out work in the locality in which he practises, no such competition exists for the quantity surveyor, and our professional bodies would be performing a great service if they could introduce some means whereby local surveyors were invariably engaged for work in that locality. This would lead to a materially improved distribution of work and would discountenance that malpractice of an architect engaging his own pet quantity surveyor to prepare quantities for a job perhaps 300 miles away from his office where local conditions and so on are quite outside his scope of experience.

Professional bodies might, moreover, by the keeping of certain records, gauge with very fair accuracy the relationship between volume of work and practising surveyors capable of dealing with it in any one locality, and could advise their members in which towns the setting up of a new business would be most likely to meet with success.

Uniform distribution of work in the profession is essential if it is to remain healthy and on a sound footing. And in this respect the profession should search its conscience and ask whether its interests are best served by fostering the large firms of quantity surveyors employing a staff of two dozen or more. Such firms appear to be turning the art of quantity surveying into something akin to an industry.

Individuality is the keynote of professional practice. Therefore let us not destroy this element of personal service, for it is our most priceless heritage.

C. S. BROWN (P.A.S.I.).

### Measured Drawings of King's Lynn.

TO THE EDITOR OF *The Builder*.

SIR,—I am sure you will be interested and pleased to know that as a result of the letter from me, which you published a little time ago, I have heard from Mr. T. M. Ashford, F.R.I.B.A., the Deputy Director of the School of Architecture, Birmingham, that it was the students of that school who, round about 1935, made some measured drawings of King's Lynn during their vacation. Mr. Ashford has promised me that as soon as his students return from the war he will try to obtain copies of these drawings, one set for the National Buildings Record, and another for addition to our local records.

L. E. WALKER,
c/o Kerner-Greenwood and Co., Ltd.
King's Lynn.

THE DIRECTOR OF THE L.M.B.A.
(Mr. G. H. A. Hughes, F.S.I.)

## NEW DIRECTOR OF L.M.B.A.

### MR. G. H. A. HUGHES ON PROBLEMS FACING THE BUILDING INDUSTRY.

ON September 1 MR. G. H. A. HUGHES, F.S.I., took over formally his new duties as Director of the London Master Builders' Association. At a conference at the L.M.B.A. headquarters last week Mr. Hughes gave a statement of his views on the present position of the building industry.

"I come from the provinces (said Mr. Hughes), but I am by no means new to Federation work, and the more I see of the building industry the more convinced I become every day of the need for a strong, united, loyal and all-embracing Federation of building trades employers. There is need for such a Federation, not only in facing the problems that lie ahead as they may affect our industry, but also in facing the problems as they affect the country. There is no need for me to remind any body of London builders of the vast programme that lies ahead of the industry, and whatever temporary expedients may be necessary (and some will be necessary) that programme in the main has to be carried out by our great industry, and in a manner worthy of it.

"I have always felt that in the building industry pride of craftsmanship stands for something a great deal more than can ever be approached by any of the other major industries in this country. The work that the builder does is a lasting memorial of his craftsmanship and pride of performance, and we are very proud of that fact in the industry. The work that we do just means everything to those for whom we are building.

"There will be those who, looking to the years ahead, may think there will be good opportunities in industry for making money with the many needs that will face this country. And there will be many who will try to enter industry with that idea solely in their minds, without regard to the performance that they will put into their work. It is up to us to see that there is no place for any such in the building industry. It is for that purpose that the present qualitative scheme of registration is being designed. In fact, as in all our other activities—our negotiations with the Unions, and so on—I feel that we must keep ever uppermost in our mind the fact that we have a grave responsibility and duty to perform to the public, because only in so far as we serve the public shall we be able to serve our own industry.

"I came to London from the Eastern Federation, which has a membership of 1,060, composed mostly of medium and small builders. Of that 1,060, something like 80 per cent. employ 20 men and less, and about half that number employ four men and less. So I think I can claim to have some experience of the problems of the medium and small builder. But at the same time, because of the geographical situation of the Eastern Counties I have been able, during the last five years, to see a considerable amount of the problems of the large builders, many of whom came into the Eastern region upon the huge defensive and offensive programme of building and constructional works there, and I hope that the experience I gained here will be of advantage to me in London.

"The Eastern Federation, the youngest of the regional federations of the National—as London, I believe, is the oldest—has been built up very largely on the basis of fair dealings with operatives, with Government Departments, local authorities and others, and on direct service to our members collectively and individually. It is my hope to continue work on that basis in London. I hope to concentrate my early activities in visiting meetings in the various Area associations, so that I may get to know members personally, to know something of their problems and their views, so that together we may shape our policy. In that I shall want the help of all members of the Association, and I hope they will make themselves known to me as I move about the London Region, and feel at any time that I am at their service."

Mr. Hughes ended by paying a warm tribute to Mr. W. J. Rudderham and his staff, of whose complete co-operation he was assured. "Mr. Rudderham," he said, "who this month celebrates his 25 years' service as Secretary to the Association, has indeed served this Association well. I have admired his work very greatly, and I look forward to working closely with him."

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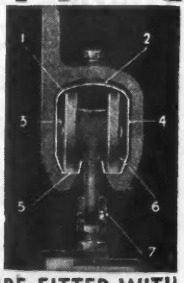


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## B.I.N.C. AND THE FUTURE

In the course of an article which appeared in *The Building Industries Survey*, Mr. Leslie Wallis, J.P. (President of B.I.N.C.), states :—

As the time draws near for the building industries to commence their post-war programme, the need becomes even more pressing for a responsible and all-embracing council of the industry, as is already provided by the Building Industries National Council. It is, I believe, necessary for every major industry to have its own central organisation able to undertake economic and statistical research, to collate the views of the industry on all matters of economic or technical concern, and, where necessary, to speak authoritatively on behalf of the industry.

It was in 1932 that the building industries realised the need for such an organisation and set up the Building Industries National Council. Since that time the importance of central organisation to every industry has grown with the ever-increasing complexity of our economic affairs and with the development of Government participation in these matters. It is obvious that Government activity in this direction has not only come to stay, but will, if anything, further develop after the war. The new White Paper on Employment Policy (Cmd. 6527) envisages a considerable degree of co-operation between Government and industry, not only during the difficult change-over from war to peace, but as part of the Government's long-term policy of securing full employment. This co-operation will, I believe, be most effective if each of the great national industries has its own responsible and comprehensive organisation for the purposes I have suggested.

These considerations, however, apply with particular force to the building industries, for several special reasons.

The first point which I would mention is the particularly important position which the industry must assume after the war. Not only must it play a key part in the physical rehabilitation of the country, but it occupies a special position in relation to the general economic structure of the country. The Government has announced in the White Paper on Employment Policy its intention of encouraging public authorities to plan their capital expenditure so as to offset any downward trend in private expenditure on capital construction. A high and steady level of building activity, based on a balanced programme of constructional work of all kinds, would be a major contribution to economic stability, including full employment. The general acceptance of these principles, which the Council has consistently advocated since its establishment, imposes new responsibilities upon the industry.

The second special feature of this industry to which I would draw attention is the fact that for over a century building activity has been subject to a very particular form of control—namely, the building legislation and bye-laws, and town-planning requirements, which have been evolved for safeguarding public health, safety and amenities. The responsible elements in the industry fully realise the need for such provisions, but they are naturally concerned to ensure that these are in consonance with, and not a hindrance to, the best technical developments. During the years 1932-1939 the Council led the way in securing the revision of the somewhat restrictive requirements which had previously existed. Now, however, the tendency is for the building industries to be placed, largely as a result of official action, under a degree of control applying to no other major industry. While it is perhaps in respect of house-building that the industry seems most liable to be subjected to regimentation, the dangers apply in some measure to other branches of building work. It is through the existence of the B.I.N.C. that the industry can best keep watch over such tendencies and draw the attention of all concerned to the implications of any fresh developments in this direction. But it is only right to add that in measure as the Council is able to provide a means for free and open co-operation between the industry and the public authorities concerned, so any tendencies towards the arbitrary or unnecessary control of building technique will effectively be checked.

The third reason for my belief in the necessity for an organisation such as the B.I.N.C. is the great complexity of the building industries, comprising several functional groups. Only an organisation representative of all those functional groups (and the Building Industries National Council is in fact so representative) can adequately advise upon the wide range of problems affecting future building operations.

I believe, therefore, that the fullest possible measure of support for the Building Industries National Council by the building industries is essential to the best interests of every section of the industry, whether professional, employing, operative, materials producers and distributors or the several ancillary services.

The value of the Building Industries National Council is not, however, confined to the service which it can render to the building industries. Service to the industries is service to the public, and this latter the Council is anxious to render. To those who are inclined to suggest that industrial associations exist for the purpose of promoting what are called "sectional interests," I would reply that the history of the B.I.N.C. is such that no one can rightly bring a charge of sectionalism against it. I believe, for the reasons which I suggested at the beginning of these remarks, that we have now entered a period of our industrial history when the development of responsible councils for each of the great national industries is essential to the best interests of the whole nation.

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## OBITUARY

### Harry Bedford Lemere.

Mr. Harry Bedford Lemere, architectural photographer, died on September 5 at the age of 79. Bedford Lemere had photographed the exteriors and interiors of a large number of the historic buildings in London, including many great houses, such as Chesterfield House, Stafford House, and Lansdowne House. His well-known photograph of the interior of St. Paul's Cathedral is an outstanding example of his work, in which, as in all his photography, there was no trace of that falsification which is not unknown in much architectural photography to-day. Lemere relied upon unerring choice of a view-point allied to superb technical skill. For over 60 years he had been a member of the Royal Photographic Society; he joined in 1883, was admitted to the fellowship of the society in 1895, and was made an honorary Fellow in 1933; and he served for many years on the Council.

Mr. Harry Batsford, Hon. A.R.I.B.A., contributes the following memoir :—

The passing of Harry Bedford Lemere leaves one with a sense of loss, as he was a lively and picturesque figure who reached back to Victorian days and yet was as well very much of the present day. He succeeded his father in the well-known architectural photographic business, which I think in all the course of its history remained in the upper floors of the house at 147, Strand. We found, on coming in contact on some matters during war-time, that he had preceded me at the City of London School by a number of years; in fact, when it was at the old place in Milk-street, in the City, before it went to the Embankment. Their business principally consisted in photographing on commission modern architectural works for architects and others, but they had in addition a very extensive and varied series of interiors and exteriors of historic country houses. Many of the rooms came from the time when the aristocracy was terribly addicted to palms. We would frequently worry Lemere's for prints of these subjects, always apologetically, for we knew it caused them an infinite amount of trouble, but they were invariably courteous and helpful. Quite a number of these subjects appeared in Lenygon and Jourdain's *Library of Decorative Art*, and it is to be hoped that steps will be taken to preserve the negatives, for they include a number of houses which have been burnt, demolished or rebuilt. It was a pleasure to lunch in recent times with Lemere on coming up to London from Malvern. He was obviously feeling the effects of age, but his spirit was as bright and buoyant, and his humour as quick and lively as ever; indeed, he retained much of the temperament of the schoolboy from the far off "City of London" days. When we renewed our acquaintance, he sent me a most beautifully finished carbon print of a Surrey farmhouse, which had been acquired by Oliver Hill, and we were able to include it in a recent volume on *The Home Counties*.

Though we can regret his passing, it was indeed a "field-path's way to Heaven," as old Matthew Henry put it, that he should have gone peacefully to an unwakening sleep in his office chair. His passing follows hard on the heels of the death of F. J. Mortimer, writer, editor and photographer of eminence, especially in marine work, who died as the result of a flying bomb.

### T. A. Lofthouse, F.R.I.B.A.

We regret to record the death, on September 1, at Middlesbrough, of Mr. Thomas Ashton Lofthouse, F.R.I.B.A., F.S.I., F.L.S., F.R.E.S., F.R.H.S.

# THE INSTITUTE OF QUANTITY SURVEYORS

## ANNUAL MEETING.

THE annual meeting of the Institute of Quantity Surveyors was held recently at the White Horse Hotel, Birmingham. MR. A. C. REMNANT, President of the Institute, was in the chair.

In his presidential address, Mr. Remnant commented on the satisfactory growth and financial position of the Institute. It had been necessary to amend the articles of association to provide for a future increase of membership to 1,000, and investments had been made and allocated to a "Headquarters Fund" with a view to transferring the headquarters of the Institute to London at the earliest opportunity. Work in the branches and amongst students had been progressive, and particularly appreciated were the lectures given to some of the branches by Mr. W. T. Creswell, K.C. The Institute examinations were held in March at the University of London and R.A.F. Headquarters, Middle East, with a record number of candidates.

Mr. Remnant commented on the report on the methods of building in the U.S.A. by the Mission appointed by the Minister of Works, particularly as they affected the quantity surveyor, and remarked: "Such suggestions are tantamount to the elimination of the quantity surveyor as a professional man and his absorption into the ramifications of a trade organisation." The general point of view of quantity surveyors in opposition to the suggestions had already been published in the Press, and, pending the issue of the Appendices to the Report, it would be as well if further expressions of opinion were withheld. Having had experience of American methods, Mr. Remnant said that he intended contributing a comparison of quantities from the British and American points of view to the Institute's Journal.

In concluding his address Mr. Remnant said: "A bill of quantities was recently defined as 'a document which should set out in detail *every* obligation and service which will be required of the contractor to which a cost, however small, may be assigned and the number and quality of units of each class of work, and should state the general conditions and method under which the work will be executed. Such a document, when priced, serves as a schedule on which to value deviations from the contract.' That would be a museum specimen of the perfect bill. How such a definition tallies with the description in war-time schedules most of us know, and it is owing to the inclusive nature of such schedules and measuring on *their* basis that surveyors have during the past five years had to sacrifice the technique of quantity surveying that they practised pre-war, a fact to be greatly deplored and which we as an examining body have to contend with when assessing the capabilities of candidates."

Following the address, Mr. A. C. Remnant, F.I.Q.S., F.F.A.S., was re-elected President for the year 1944-45, with Messrs. F. Biscoe Taylor, F.I.Q.S., F.F.A.S., J. B. Shaw, J.P., F.I.Q.S., A.I.Arb., M.R.I.P.H., F.I.A.S., and H. A. L. Tozer, F.I.Q.S., as Vice-Presidents.

### The late Mr. W. J. Clemens.

We regret to announce the death recently of Mr. William John Clemens, senior partner of W. J. Clemens, building contractor. Mr. Clemens, who was highly respected in the building industry, was a member of the London Master Builders' Association for many years.

# CIVIC SURVEY EXHIBITION

A CIVIC, Survey and Housing Exhibition, organised by the City of Lincoln, will be formally opened by the Mayor (Councillor L. J. Mills, J.P.), at 3 p.m., on Friday, September 22. The exhibition will remain on view to the public at the Usher Art Gallery, Lincoln, until Sunday, October 1. The opening address will be given by Miss Florence Horsbrugh, Parliamentary Secretary to the Ministry of Health.

The exhibition, as its title implies, is in two parts. One consists of a series of some 70 maps, charts and diagrams, with written comments, designed to illustrate the physical, social and economic conditions in and around Lincoln. A comprehensive survey of this nature has been considered by the Council's Reconstruction Committee to be a necessary preliminary to its putting forward concrete proposals for reconstruction and further development of the city.

The survey has been carried out by the Department of the City Engineer (Mr. A. Adlington, A.M.Inst.C.E.), with the collaboration of other chief officers of the Council and Government Departments. It has been under the direction of his deputy, Mr. R. L. Stirling, now Planning Officer to the Lincoln and District Joint Planning Committee.

The second part of the exhibition is devoted to post-war housing proposals under consideration by the Council's Housing Committee. It will include a display of type plans and layouts for houses, flats, and cottages for old people, together with scale models of a two-bedroom and three-bedroom non-parlour type house. Models of two estate layouts will be shown, one of which is included in the Council's immediate post-war housing proposals. Considerable space is devoted to kitchen planning, and the exhibits will include a full-size model of a kitchen based on the Lincoln type plans.

The City Electrical Engineer has obtained the loan of the Leeds all-electric kitchen model and the Burnley kitchen unit, and has made a quarter-size model of one of the Lincoln kitchen plans, with dining recess and utility room. The Gas Department will also have on view a full-sized replica of the kitchen and bathroom of one of the model flats designed for the gas industry by Miss Jane Drew, F.R.I.B.A.

The house plans have been prepared by the City Engineer and his Chief Architectural Assistant (Mr. E. Firth), the small-scale models by the handicraft departments of local schools, and it is hoped that the whole of this part of the exhibition will occasion comment from the general public which will be of assistance to the Housing Committee. As a matter of further general interest, the exhibition will include the series of illustrations entitled "The Town House," loaned by the Housing Centre.

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# WAR DAMAGE

## IMMEDIATE FIRST-AID REPAIRS.

THE following extracts from Ministry of Health Circulars are of interest at the present time:—

### Serial No. 1. July 4, 1944.

1. STANDARD OF REPAIRS.—Immediate repairs should not go beyond the standard set out below. Further repairs should be undertaken only after consultation with the Regional Architect of the Ministry of Health. *Roof and Chimneys.*—Where extensive damage has occurred roofs are covered with tarpaulins or with roofing felt well battened down. Tiles or slates may be replaced to small patches. Remove loose chimney brickwork and rebuild where essential. *Windows.*—Refix displaced frames and secure sashes or casements. Hack out broken panes and cover spaces with suitable opaque or translucent material. A reasonable amount of daylight, say, to the extent of half the window area, to be ensured. *Doors.*—External doors to be temporarily repaired and rehung. *Walls and Ceilings.*—Loose plaster to walls and ceilings to be taken down and rooms left safe for use. Ceilings open to roof space to be covered with suitable material. *Fittings.*—Refix essential fittings where disturbed. *Services.*—Restore minimum essential services. Clean down, clear away all debris, broken glass, etc., and cart away.

### Serial No. 5. July 12, 1944.

16. INTERNAL REPAIRS.—To ensure the continuance of work, labour may be employed during inclement weather on the repair of ceilings in the rooms in which meals are taken and on the sealing-in of the roof spaces. Arrangements are being made for the supply of the necessary materials.

46. STANDARD OF REPAIRS.—1. If the recent reduction in the number of incidents continues, repairs to the standard indicated in Serial Note No. 1 of July 4, 1944, will shortly be completed in some areas. It may be necessary to move some labour to districts which have suffered particularly heavy damage, but the present standard is so low that it must be improved at the first opportunity. Where circumstances permit, therefore, local authorities should now proceed with a further stage of first-aid repairs.

2. For the time being it is necessary that further work should be limited as indicated in the next paragraph and that priority should be given to occupied houses.

3. *Roofs.*—Repairs should be extended as far as possible and tarpaulins collected. *Ceilings.*—Loose plaster in ceilings should be removed; small patches should be repaired, but where most of the ceiling has fallen, the exposed part should be covered with plaster board or similar material. *Walls.*—Damaged partition walls should be repaired. *Windows.*—Reset damaged sashes and frames, making provision for ventilation. As additional supplies of translucent material become available, they should be used to secure the amount of daylight mentioned in Serial No. 6.

*Guttering, etc.*—Broken guttering, downpipes, flashings, etc., should be replaced.

# DESIGN OF DWELLINGS

## MISS LEDEBOER'S ADDRESS TO HOUSING CENTRE.

On September 5 the Housing Centre opened its autumn session of Tuesday meetings at 13, Suffolk-street, S.W.1, by an address from Miss J. G. Ledeboer, A.R.I.B.A. Professor Holford presided.

Miss Ledeboer said the Dudley Committee had attempted to set standards for new houses. The Tudor-Walters report had set a standard which, as the result of the economy campaign of 1930-31, had been reduced; and now, instead of its 760 sq. ft. of superficial area the Dudley Committee recommended 900. The first thing to consider in the housing problem was the cost of providing the houses and the rent which could be paid for them, and here the Dudley Committee had had but little guidance. There was the experience of local authorities before the war, but this experience had varied from town to town. The post-war position was affected by such proposals as that for family allowances, and the fact that we did not know what would be the basic level of wages. The cost of building was up by 100 per cent.: how far would it come down? The Dudley Report suggested that prices might fall to within 30 per cent. of their pre-war level. The standard set was what the Committee thought the minimum at which a woman could bring up a family while doing the housework herself, but such a standard could only be found by experience. Local authorities, many organisations such as the Women House Property Managers, and architects had stated their experience. After the war, opinion surveys might be taken. The dwelling suggested for a family with three children contained, besides living rooms, three bedrooms and a bathroom. The ceiling was retained at a level of 8 ft. in spite of suggestions to bring it down 6 in. The Tudor-Walters Report had been based on the requirements of an agricultural family. The kitchen range was in the living-room, and around that it was assumed the family would assemble. The copper was the only means of getting hot water. The family was seen as a small, self-sufficient unit.

The Dudley Report envisaged a family with far more varied activities and more visitors. Certain factors favoured the small house. People went out to the cinema instead of staying round the fire. The husband had his meals in the factory canteen. The youngest children went to the nursery school and all had meals at school. If we compared our own standard with that of other countries we found the British house much larger than the Swedish. In America also there were fewer and smaller rooms to the dwelling, but American planning might influence us in the direction of eliminating such things as halls and landings. Space was the basic element in planning, first its amount and then its apportionment. There were certain requirements in every kitchen. The most difficult point to define was the relationship between cooking, heating and living. There should be a place in which to cook meals, a place in which to eat them and a place for sitting down and social intercourse. The arrangement of those three fundamentals might cause dispute. The Dudley Committee had secured evidence from a large number of working-class organisations, and had found that although there was an aspiration towards a house with three living-rooms, the house with two such rooms fulfilled most requirements. This might be a house with a kitchen in which meals could be taken. Some people did not like meals in the kitchen; on the other hand, besides working-class families, there were many middle-class ones who, now they could get no domestic help, took their meals in the kitchen. The American practice was to have an alcove coming off the kitchen or living-room. A question on which the Dudley Committee had not been able to make up its mind was as to the utility room. Some said that if people had their meals in the kitchen, facilities for laundry, such as a wringer, should not be in the same room, but others preferred that cooker, sink, copper, etc., should all be together. In London the bag wash had made many people used to sending their washing out, and that fashion would probably spread. Another point difficult of decision was that of heating: a good deal of attention was being given to central heating by one openable stove. If adopted this would affect plumbing. The modern tendency was to develop pin-point plumbing, and this led to a certain type of house design; but one difficulty about such a method of heating was that there was no open fire to sit round. This affected the most fundamental principle of housing—*i.e.*, that the family should be comfortably and well housed.

Mr. Appelbe asked whether anything was being done according to the Japanese idea? There you had the outer shell of the house fixed, but all the inside partitions were movable, so that you could have more or fewer, larger or smaller rooms.—Miss Ledeboer replied that in some cases the party wall between houses was pierced, so that the house on one side had an extra bedroom at the expense of the house next door.

A lady visitor said that many people in London were too poor to afford even a bag wash. Miss Ledeboer said in principle the essence of a home was that it should have within itself every facility, and in the future the tendency might be to supply arrangements to do whatever was wanted within it; but, on the other hand, the practice of sending the washing out had grown.

Another question was whether the kitchen should be at the back of the house or in front? The reply was that local authorities who had built houses with kitchens facing the street were now determined to build no more houses like that. The woman preferred to be able to run out into the garden and hang up clothes or put things into the dustbin without being observed.

**"THE BUILDER"**
**PRICES AND WAGES.**

**Until further notice and in order to devote more space to news, *The Builder* copyright "Prices Current of Materials" and Rates of Wages will be given in the first issue of each month only. Current changes will be given weekly as they occur.**


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# E.J.M.A.

## 40th ANNUAL MEETING.

At the annual meeting of the English Joinery Manufacturers' Association (Inc.) held on September 6, Mr. R. W. Mugford, senior vice-president (Duncan Tucker (Tottenham), Ltd.), was unanimously elected president for the ensuing two years. Mr. James Austin (Austins of East Ham, Ltd) and Mr. John Duxbury (Magnet Timber, Ltd.) were re-elected as vice-presidents. Mr. M. van Westerborg (Joinery and Builders' Supplies, Ltd.) was also elected a vice-president. Mr. W. E. Adams, J.P., F.C.I.S. (John Sadd and Sons, Ltd.), was unanimously re-elected hon. treasurer.

The meeting was followed by a luncheon, when Lieut.-Col. Henry N. Newsum, M.C., J.P., was presented with a Queen Anne walnut bureau bookcase on his retirement from the office of president, which position he had filled for the past five years. This luncheon also celebrated the 40th anniversary of the Association.

Points from the speech of the retiring president (Mr. Newsum) were:—

The work of the Joinery Reconstruction Committee is going to be the most important, far-reaching, and satisfactory contribution to the welfare of our trade in the immediate post-war period, and without it a smooth transition from war to peace conditions would be impossible.

We have designed a range of "EJMA" standard kitchen units in accordance with the overall sizes agreed by the Ministry of Works, and these kitchen units have been exhibited. It is our hope that the complete data book on the kitchen and window units will very shortly be published.

As a result of a visit paid within the last two weeks to Scotland by Mr. Greenham and Mr. Hustler at the request of the Scottish Joinery and Door Manufacturers' Association, the members of that Association have all expressed their intention of becoming individual members of our Association. An offer has been made by one of the Scottish members to approach the joinery manufacturers in Northern Ireland with a view to their also becoming members. If this should come about the Association will truly be becoming representative of the joinery trade of the United Kingdom.

It became evident a little time ago that the planning of post-war houses by Municipal Authorities was still proceeding on the basis of more or less timberless houses in respect of manufactured woodwork, and that in so planning the municipalities were still taking their cue from instructions issued by the Ministry of Works. Recently Lord Portal granted an interview to Mr. Austin and Mr. Greenham, with most satisfactory results, and after a further interview with Sir Hugh Beaver, the Director-General of the Ministry of Works, the Association received a letter from the Ministry giving it the assurances which it required.

# WAR SAVINGS

## AN EXAMPLE TO BE FOLLOWED.

THE War Savings Committee of the Building, Civil Engineering and Allied Trades has on several occasions pointed to the successful methods employed by Messrs. John Laing and Son in encouraging their employees to save, and in order to discover at first hand just how it is done, so that other contractors might with advantage to the War Savings movement adopt similar methods, Mr. W. T. Creswell, K.C., Hon. Secretary of the Committee, who is at present doing a tour of building firms, visited Mill Hill last week. He was accompanied by Mr. R. W. Archard, the Regional Industrial officer.

As described by Mr. Creswell, the methods adopted are as follows :—

During the initial period when the planning of work for a contract is being undertaken, full consideration is given to arrangements for saving. A column for savings only is included in the wages sheets, and specially prepared circulars are made available for distribution to all employees on the contract site. These circulars are distributed to all employees, whether permanent personnel—that is, key personnel who travel from site to site—or casual labour taken on at the site itself. The circular announces that the company will add 6d. to every 14s. 6d. saved, and stipulates the multiples of money which can be deducted from the employees' wages each week.

On completion of the circular, arrangements are made for the deduction authorised to be made from wages each week. Certificates are purchased beforehand in bulk, so that the employee not only obtains the advantage of buying a 15s. certificate for 14s. 6d., but also the certificate is dated earlier than the actual date of completion of purchase.

In addition to the certificate scheme, savings stamps are available on each site.

All managers, foremen and key personnel on the site are urged to induce as many of the employees as possible to join a Group. Each site has its own self-contained office establishment and cashier, with its own wages sheets, so that every site becomes in effect a self-contained unit. Each site informs the head office of the amount of saving each week, thus ensuring that the company is aware of the effectiveness of its savings organisation. Also, there is a fortnightly meeting of site managers and directorate, and the progress of savings is discussed at each of these meetings.

Mr. John Laing, the chairman of the firm, takes a very keen personal interest in the results of the savings in the company, and targets are set and comparisons of savings on each site are issued from time to time.

The effectiveness of all this is best shown by the results achieved. These, computed in relation to salaries and wages, average 1s. 3d. in the £. When difficulties of organisation in the building trade are considered, this amount so saved compares extremely favourably with other industries where organisation is much easier, and casual labour is almost unknown.

### Copper Housing Tubes: A Correction.

In our issue of September 1 there appeared on page 52 an advertisement of the Birmingham Battery and Metal Co., Ltd. Unfortunately, through a typographical error in the last paragraph, it read "The long lengths *have* joints," but it should have read *save* joints. We much regret the error in description as the whole feature of the system is that these continuous lengths have no joints.

# THE SCOTTISH BUILDER

## NEW BUILDINGS

**GREENOCK.**—Erection of 200 houses at the North Auchneach, David L. Henderson, Architect, Old Harbour Trust Offices, Wallace-sq., Greenock. Excavation, brick, mason and building work, etc., William Nimmo (Builders), Ltd., Glasgow, £87,223; precast concrete floors and roofs. The Siegwart Fireproof Co., Ltd., Glasgow, £84,538; flat roof coverings, James C. Ellison, Ltd., Sale, nr. Manchester, £3,264; joinery, carpentry and allied works, etc., J. & J. Chalmers, Ltd., Hamilton, Lanarkshire, £15,187; steel windows and casements, etc., Henry Hope & Sons, Ltd., Smethwick, Birmingham, £4,292; glazing and allied works, etc., Thomas Thow & Co., Ltd., Ayr, £906; roughcast and cement works, etc., J. & J. Chalmers, Ltd., Hamilton, Lanarkshire, £4,917; plumber work and sanitary engineering, etc., James Wilson & Sons (Plumbers), Ltd., Paisley, £18,668; plaster, lathing and cement work, Holmes & Jackson, Ltd., Glasgow, £18,188; electrical engineering and fixtures, etc., James Stuart Denholm, Newlands, County of Glasgow, £5,235; grates, fittings and allied works, Joseph Reid, 357, Argyll-st., Glasgow, £3,578.

# FUTURE CONSTRUCTION

## CONTRACTS OPEN

**For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.**

### BUILDING

**SEPTEMBER 21.**

**North Riding E.C.**—Erection of kitchen at Hackness C.E., Newton-on-Ouse, C.E. and Tollerton Methodist schools. F. Barraclough, Ed. Offices, County Hall, Northallerton.

**SEPTEMBER 23.**

**Bury St. Edmunds.**—Construction of garage at Ixworth. M. M. Khan, B.Sc. (Lond.)., Consulting E., 8, Whiting-st., Bury St. Edmunds. Dep. £2.

**Cookstown R.D.C.**—Repairs to 179 cottages. J. M'Cammon, Cookstown R.D.C., Council Boardroom, Cookstown, Co. Tyrone. Dep. £3 3s.

**Cromer U.D.C.**—Erection of pump house at Aylmerton. J. C. Melliss & Co., 7-8, Bury-st., London, E.C.3. Dep. £2 2s.

**SEPTEMBER 25.**

***Romford T.C.**—Reinstatement of eight flats at Heath Park-rd. and Balgones-la. B.E. and S. Dep. £2 2s.

### PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

**SEPTEMBER 21.**

**Worcester T.C.**—Internal decoration and incidental repairs at British Restaurant, School-rd. City E. Dep. £2 2s.

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**SEPTEMBER 22.**

**Southport C.B.**—Painting structures on foreshore. B.E. Dep. £1 1s.

**SEPTEMBER 23.**

**Lewes T.C.**—External painting of Town Hall, Corn Exchange and Municipal Offices. C. T. Butler (L.), B.S.

**SEPTEMBER 25.**

**Brighton T.C.**—Repairs and paintwork at one small propagating house and one large propagating house at Roedale Nurseries. B.E. and S. Dep. £1 1s.

**Hambledon R.D.C.**—External painting of 103 houses. R. J. Garland, C., Council Offices, Bury Fields, Guildford.

### ROADS, SEWERAGE AND WATER WORKS

**SEPTEMBER 28.**

**Luton B.C.**—Construction of approx. 20,000 yds. of carriageway and laying of approx. 4,000 yds. of sewer, etc. B.E. Dep. £2 2s.

**OCTOBER 9.**

**Leeds Group.**—Construction of concrete and pitched roads and surface water drainage on approx. seven sites. R. A. H. Livett (A.), Housing Director, Priestley House, Quarry Hill, Leeds 9.

**OCTOBER 10.**

**North-West Midlands Joint Electricity Authority.**—Construction of main access roadway and railway, etc. Sir Alexander D. Gibb & Partners, Queen Anne's Lodge, Westminster, S.W.1. Dep. £5 5s.

### PUBLIC APPOINTMENTS

**SEPTEMBER 25.**

**Reading E.C.**—Headmaster for Junior Building School. £500—£20—£600, plus war bonus. Application forms from F. V. Merriman, Chief Ed. Officer, Ed. Office, Blagrave-st., Reading.

**SEPTEMBER 30.**

**London County Council.**—Principalships. (1) Hackney Technical Institute. £820-£50-£960, plus war bonus. (2) South-East London Technical Institute, Lewisham Way. £960-£50-£1,200, plus bonus. Apply to Ed. Officer (T.I.), County Hall, Westminster Bridge, S.E., for application form(s), enclosing stamped and addressed foolscap envelope.

**OCTOBER 16.**

**Hertfordshire C.C.**—County Architect. Salary £1,500 p.a. Applications to Clerk to County Council, County Hall, Hertford.

**SEPTEMBER 23.**

***Bucks C.C.**—Two temporary Architectural Assistants. £300, rising to £360, plus war bonus. County Architect, County Offices, Aylesbury.

**NO DATE.**

***Kent E.C.**—Full-time Senior Assistant. Principal, Medway School of Arts and Crafts, Department of Architecture, Eastgate, Rochester.

## GENERAL BUILDING WORK

**Barnard Castle.**—Five 'bus shelters to be built. Plans by H. A. Smith, S.

**North Riding.**—C.C. to consider erection of houses for farm workers at Old Hall Farm. Plans by County Architect, County Hall, Northallerton.

**North Riding.**—C.C. Highways Committee acquired a site at Richmond for erection of depot. Another depot proposed at Wensleydale.

**Sunderland.**—Government allocated three new factories for the Sunderland area.

## BRITISH RESTAURANTS AND CANTEENS

**Cumberland.**—C.C. to carry out alterations and additions to kitchen at Cockermouth Secondary school. Plans by County Architect, 4, Alfred-st. North, Carlisle.

**North Riding.**—Plans approved for school dining centre at Barker-rd., Thornaby, for County E.C.

## TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

**Gravesend.**—Adaptation of requisitioned properties, for T.C. J. G. Bennett (F.). 82, Peacock-st.: *Messrs. Bridger, Gravesend, £217; 2 and 4, Manor-rd.: *Messrs. Hopkins, Gravesend, £184.

**¶London (Ministry of Works).**—Contracts placed by M.O.W. during week ending September 7:—

Durham: Building work, Wm. Hall (Contractors), Ltd., Derwent Joinery Works, Gateshead-on-Tyne.

Lancs: Building work, R. & J. Bradley, Armoury Bank, Ashton-in-Makerfield; H. & J. R. Bradshaw, Hill-la., Blackley, Manchester.

¶**London (Air Ministry).**—List of new contracts to value of £500 or over for week ended September 9.

Civil engineering work: Wm. Tawse, Ltd., Angusfield, Aberdeen.

General maintenance work: George Law, Ltd., Kidderminster; Stone & Co. (Bristol), Ltd., Bristol; G. E. Wallis & Sons, Ltd., Truro, Cornwall; Thomas Lowe & Sons, Ltd., London, W.6.

Surfacing work: Bituminous Surfacing, Ltd., Manchester.

Heating and hot water supply work: Comyn Ching & Co. (London), Ltd., London, W.C.2; Rowells (1924), Ltd., Newcastle-on-Tyne 2; Ashwell & Nesbit, Ltd., Leicester.

Timber felling work: Langshaw Rowlands, Wrexham.

Agricultural work: Maxwell M. Hart, Ltd., Glasgow, C.1.

Installation work: Rigg and Remington, Ltd., London, N.W.7.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended September 2:—

Lincs: Miscellaneous work, W. & J. Simons, Ltd., West Bridgford, Nr. Nottingham.

Staffs: Hutting (erection), Joseph Webb, Cosely, Staffs.

Oxfordshire: Miscellaneous work, Knowles & Son (Oxford), Ltd., Oxford.

Essex: Miscellaneous work, Baker Bros., Alresford, Nr. Colchester.

Essex: Miscellaneous work, S. Cronin & Sons, Warley, Essex.

Surrey: Miscellaneous work, E. J. Logan, London, S.W.15.

Hampshire: Miscellaneous work, Smith Bros. (Builders), Ltd., West Byfleet, Surrey; building work, A. J. Sapp, Basingstoke, Hants; roof asphalting, The Rock Asphalte Co., Ltd., London, W.6.

Dorset: Hutting (erection), Mears Bros. (Contractors), Ltd., Blandford, Dorset.

**North Riding.**—Resurfacing of main drive, etc., at Mental Hospital, for C.C.: *W. & J. Glossop, Ltd., Hipperholme, Yorks, £1,789.

**North Riding.**—Repairs to chapel and main roofs at Mental Hospital, for C.C.: *T. Belt & Sons, York.

**South Shields.**—Erection of factory: *J. Gerrard & Sons, Swinton, nr. Manchester.

## NEW COMPANIES

THE particulars quoted below have been compiled by Messrs. Jordan & Sons, Ltd., Company Registration Agents, of 116 and 117, Chancery lane, W.C.2, from the documents available at the Companies Registry.

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L. G. BUXTON AND CO., LTD. (387909). Regd. May 31). 9a, Loseby-ln., Leicester. Bldrs., etc. Nom. cap.: £300. Dirs.: F. J. O. Bailey, A. J. Wakeling and L. G. E. Buxton.

HOLLAND BUILDERS (BEXLEYHEATH), LTD. (387882). Regd. May 30. 227-229, Broadway, Bexleyheath, Kent. Nom. cap.: £3,000. Dirs.: Vera V. Edse, Daphne Burton and J. J. Holland.

WALTER COLE AND KNIGHT, LTD. (387786). Regd. May. 23. Bldrs.' mchts., bldrs., etc. Nom. cap.: £500. Subs.: C. J. Walker, 18, Wood-ln., Kingsbury, N.W.9, A. H. Cole, and E. C. Knight


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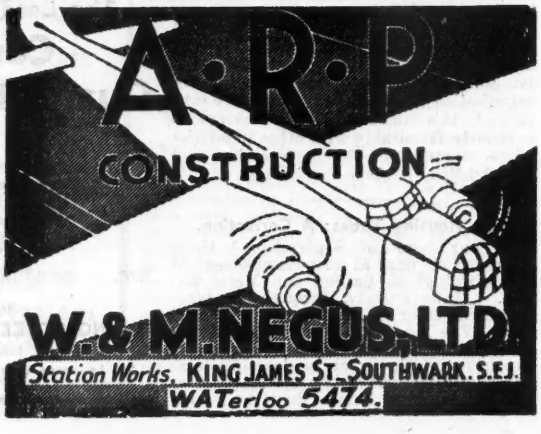
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